Serial Flash Microcomputer

Programmer

S550-SFW1U

Operation Manual

Sunny Giken Inc.

Serial Flash Microcomputer Programmer
S550-SFW1U

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Specifications of this product and/or the software attached to this product may be modified without notice for improvement.

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1. Outline

1.1 Precautions

Thank you for purchasing our product S550-SFW1U, the Serial Flash Microcomputer Programmer. Please read this operation manual carefully to understand the functions of this product for effective and stable operations. Please beware that Sunny Giken Inc. shall have no liability for any damages and/or troubles caused by misuse or careless handling of this product.

1) General Cautions

Please observe the following points to avoid hazards such as fire, burns, electric shock, and/or injures:

- Use this product under proper environment.
- Never use this product placed up side down or vertically.
- Handle this product with care to avoid high impact caused by fall and/or physical shock.
- Never disassemble and/or modify this product by yourself.

2) Operating Environment

- Do not use this product in environments described below:
  - Dusty places
  - Places where there is the presence of corrosive gases
  - Places exposed to direct sunlight
  - Places surrounded by equipments that could become sources of noises
  - Places with severe mechanical shock and/or constant mechanical vibration
- Operational ambient temperature 0°C to 40°C
  Humidity: below 80% (non condensing)
- Preventing electrostatic buildup for handling this product and devices is highly recommended.

3) Storage

- If you do not plan to use this product for a long time, put this product in the packing box in which the product had been delivered, and store it in the shade with the ambient temperature of -10°C to +40°C and below 80% of humidity (non condensing).

4) Transportation

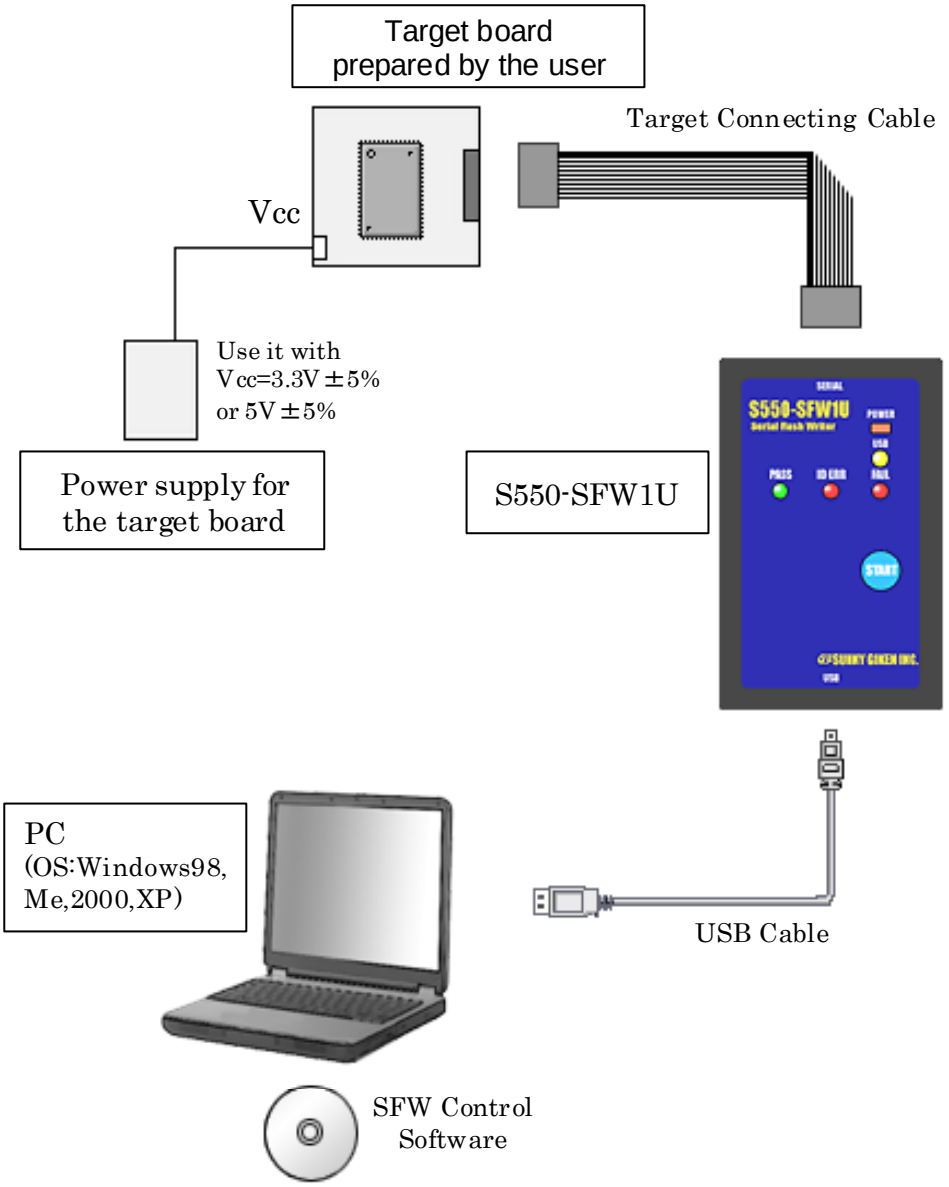
- When transporting this product, be sure to use the packing box in which the product had been delivered when you made your purchase.

5) Cleaning

- Wipe the product with soft and clean fabric when it needs cleaning. Never use any sort of organic solvent such as benzine that may cause this product to deteriorate.

1.2 System Configuration

The entire system configuration of the Serial Flash Microcomputer Programmer S550-SFW1U is illustrated below.



* For details on connection according to functions, refer to “4. Connections”.

2. Specifications

2.1 General Specifications

S550-SFW1U Main unit

Operating Environment	Ambient temperature : 0°C to 40°C　Humidity: below 80% (non-condensing)
Storage Environment	Ambient temperature: -10°C to +40°C Humidity: below 80% (non-condensing)
Operating voltage	3.3V plus or minus 5%, or 5V plus or minus 5%
Power capacity	Equal to DC5V 80mA or lower
Dimensions	55 (W) x 85 (H) x 17 (D) mm
Weight	Approximately 60g
International standards	CE mark obtained (MI:EN55011 Group1 ClassA ,EMS:EN610000-6-2)
	FCC compliance This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions; (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

2.2 Function Specifications

Programmable MCU	Renesas Flash Memory Internal Microcomputer
Operation Mode	Standard serial I/O mode (clock synchronous serial I/O and single wire clock asynchronous serial I/O(applicable to R8C/Tiny series)) * Clock asynchronous serial I/O mode not supported.
Programming Mode	Serial Programming
Action Mode	Erase/Program/Verify

2.3 System Requirements

Host Machine	IBM PC/AT Compatible machine
CPU	Pentium200MHz or higher processor clock speed
Memory	64Mbyte or higher
HDD	Minimum of 10Mbyte available disk space
CRT	800 x 600 dots or better, minimum of 16 bits (24 bits or more recommended)
Others	CD-ROM drive x 1 USB 1.1 compliant USB port x 1
OS	Microsoft Windows98, Me, 2000, XP

2.4 Programmable Device

The Renesas built-in Flash Memory Microcomputers are the programmable devices.　Some devices are under evaluation or not programmable.　Refer to the file “Programmable device List” in the enclosed CD-ROM.　For latest information, please visit Sunny Giken’s homepage:
http://www.sunnygiken.jp/english/sfw1u-support-e.html

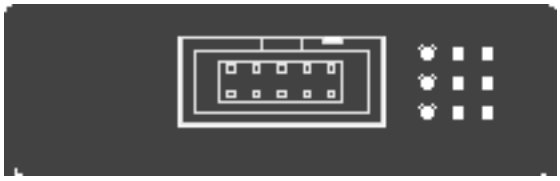
2.5 S550-SFW1U External Appearance

The external appearance of S550-SFW1U is shown below with descriptions of switches, LEDs and connectors.

* Front View

Switch/LED		Function
Power LED	POWER	Is lighted when the power is supplied to S550-SFW1U (including when the power is supplied from the target bard).
USB LED	USB	Is lighted when the PC and S550-SFW1U is connected through USB, and blinks while accessing.
Programming result LEDs	PASS	Is lighted when programming to the target is completed successfully.
	ID ERR	Is lighted when “ID Error” occurs while programming to the target.
	FAIL	Is lighted when errors other than ID error occurs while programming to the target.
Start Switch		Starts programming to the target.

* Top Side View



Connector	Function
Serial	Cable connector (connecting to the target)

* Bottom Side View

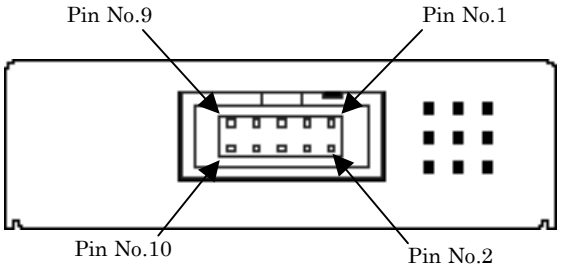
Connector	Function
USB	USB (mini B) Communication connector (connecting to PC).

2.6 Connector Pin Specifications for Serial Programming

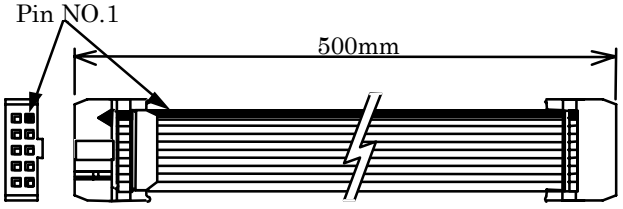
- Connector Pin(S550-SFW1U Main unit)
  Model :HIF3FC-10PA-2.54DS Hirose Electric

- Pin Assignment (S550-SFW1U Unit)
  ***Note that signal names and directions are ones seen from the programmer side.**
  Especially, 4:TXD and 10:RXD would be the other way around when seen from the target side.

Pin No.	Signal Name	Descriptions	Direction
1	Vcc	Power is supplied to S550-SFW1U through Vcc pins when programming.	-
2	BUSY	Busy signal input for serial programming	Input
3	CLK	Clock signal output for serial programming	Output
4	TXD	Transmission data for serial programming	Output
5	CE	CE signal output for serial programming	Output
6	EPM	EPM signal output for serial programming	Output
7	GND	Signal ground	-
8	RESET	RESET signal output for serial programming	Output
9	CNVss	CNVss (Vpp) signal output for serial programming	Output
10	RXD	Received data for serial programming	Input



- Target Connecting Cable
  The attached cable for connecting a target is a straight cable. If the connector on the cable does not match the one on the target board, cut off one side and attach a matching connector referencing the above pin assignment. Be sure to arrange the cable carefully so that the length of the target connecting cable would be 500mm or less.

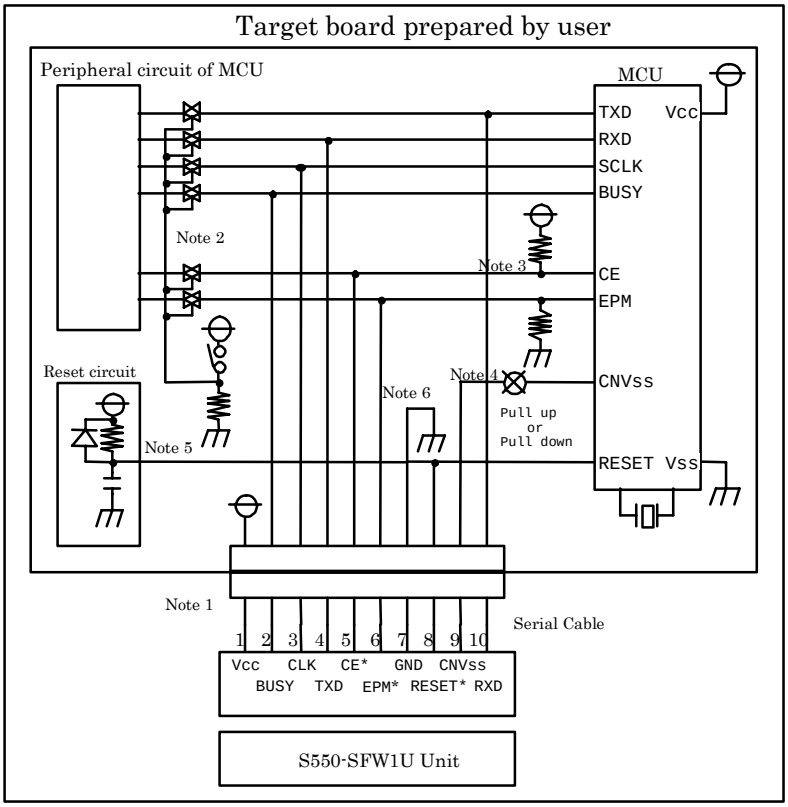


Connector Model: HIF3BA-10D-2.54R, Hirose Electric

3. Circuitry Example

The following diagram shows an example of a circuit for serial programming when you design peripheral circuit of MCU.

3.1 M16C/60 (excluding 62P[double power supplies]), M16C/80 series, M32C/83, M16C/24 groups and R32C/100 series (excluding R32C/112)



Note 1. Power supply of S550-SFW1U is provided by a user target board via Vcc pins. Connect the power source of the board to the Vcc terminal directly. Usage of Vcc should be 3.3V plus or minus 3%, or 5V plus or minus 3%.

Note 2. Isolate TXD, RXD, SCLK, and BUSY terminals from the MCU peripheral circuit, in case the jumper, analog switching, three-state, etc. are built in when serial programming. Isolation can be omitted when the signals to the peripheral circuit are in output status when seen from the target CPU. When pulling-up these signals, the resistance should be more than 4.7k ohms.

Note 3. Execute the same procedure as “Note 2” for CE and EPM terminals. You may also choose to pull-up or pull-down each and isolate without connecting to CE and EPM on S550-SFW1U. When they are not used in the peripheral circuit, you may fix CE at H level and EPM at L level on the board directly.

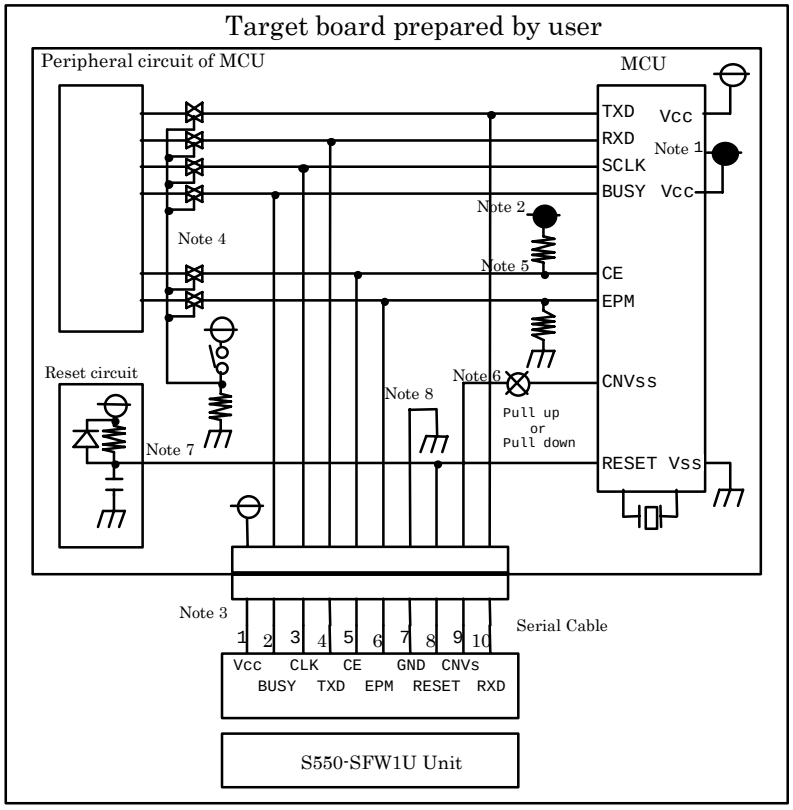
Note 4. Connect CNVss terminal to the CNVss on S550-SFW1U by pulling-up or pulling-down with 10K ohm resistance. If the CNVss terminal is fixed at H level by jumper switching and others, no connection to the CNVss on S550-SFW1U is required.

Note 5. When the reset circuit on your target board is CR delay circuit or open collector output, or it is a circuit with constant current load of less than tens of micron amperes, connect the terminal to the RESET terminal on S550-SFW1U directly. Execute the same procedure as “Note 2” for CMOS output.

Note 6. Vss terminal is signal ground. Be sure to connect it.

*** Please combine with this example of a connection circuit, and confirm a "Hardware manual" or a "Data sheet" of each microcomputer.**

3.2 M16C/62P[double power supplies], M32C/84, M32C/85, M32C/86 and R32C/112 groups



Note 1. Be sure to set it so that Vcc1 is greater than or equal to Vcc2.

Note 2. When Vcc1 is greater than Vcc2, do not connect the CE pin to the CE terminal on S550-SFW1U. Please pull it up on the target board by Vcc2. In case that Vcc1 equals to Vcc2, refer to the Note 5.

Note 3. Power supply of S550-SFW1U is provided by a user target board via Vcc pins. Connect the power source of the board to the Vcc terminal directly. Usage of Vcc should be 3.3V plus or minus 3%, or 5V plus or minus 3%.

Note 4. Isolate TXD, RXD, SCLK, and BUSY terminals from the MCU peripheral circuit, in case the jumper, analog switching, three-state, etc. are built in when serial programming. Isolation can be omitted when the signals to the peripheral circuit are in output status when seen from the target CPU. When pulling-up these signals, the resistance should be more than 4.7k ohms.

Note 5. Execute the same procedure as “Note 4” for CE and EPM terminals. You may also choose to pull-up or pull-down each and isolate without connecting to CE and EPM on S550-SFW1U. When they are not used in the peripheral circuit, you may fix CE at H level and EPM at L level on the board directly.

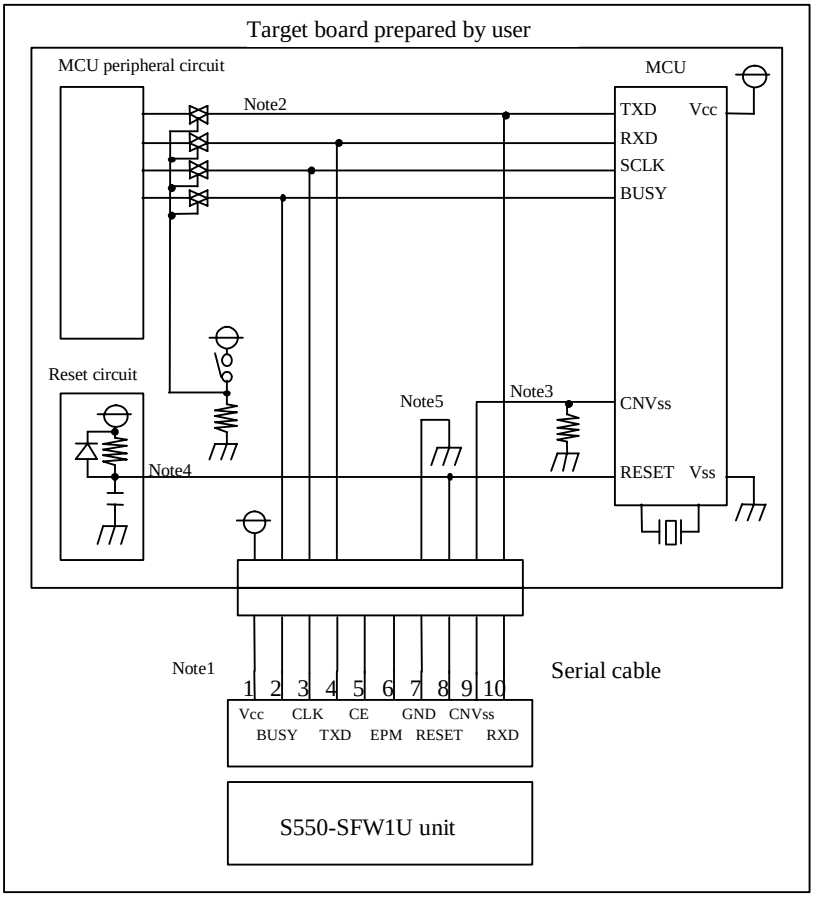
Note 6. Connect CNVss terminal to the CNVss on S550-SFW1U by pulling-up or pulling-down with 10K ohm resistance. If the CNVss terminal is fixed at H level by jumper switching and others, no connection to the CNVss on S550-SFW1U is required.

Note 7. When the reset circuit on your target board is CR delay circuit or open collector output, or it is a circuit with constant current load of less than tens of micron amperes, connect the terminal to the RESET terminal on S550-SFW1U directly. Execute the same procedure as “Note 4” for CMOS output.

Note 8. Vss terminal is signal ground. Be sure to connect it.

*** Please combine with this example of a connection circuit, and confirm a "Hardware manual" or a "Data sheet" of each microcomputer.**

3.3 M16C/50 series



Note 1. Power supply of S550-SFW1U is provided by a user target board via Vcc pins. Connect the power source of the board to the Vcc terminal directly. Usage of Vcc should be 3.3V plus or minus 3%, or 5V plus or minus 3%.

Note 2. Isolate TXD, RXD, SCLK, and BUSY terminals from the MCU peripheral circuit, in case the jumper, analog switching, three-state, etc. are built in when serial programming. Isolation can be omitted when the signals to the peripheral circuit are in output status when seen from the target CPU. When pulling-up these signals, the resistance should be more than 4.7k ohms.

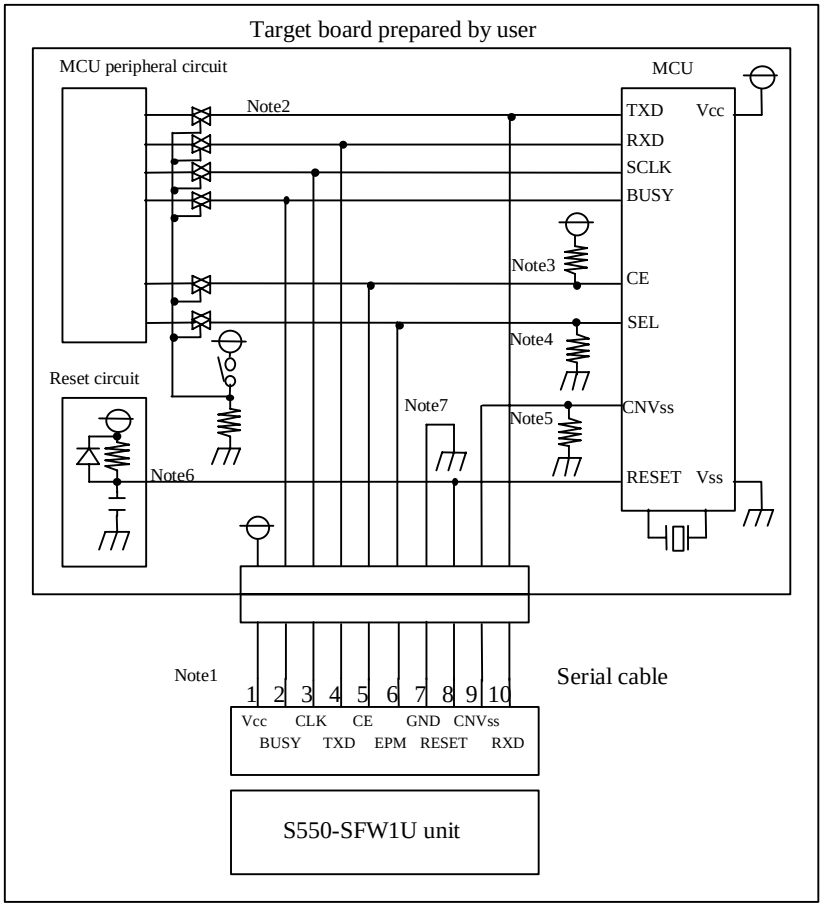
Note 3. Connect CNVss terminal to the CNVss on S550-SFW1U by pulling-down with 10K ohm resistance. Do not connect a capacitor to this terminal. For other circuits, please consult with us.

Note 4. When the reset circuit on your target board is CR delay circuit or open collector output, or it is a circuit with constant current load of less than tens of micron amperes, connect the terminal to the RESET terminal on S550-SFW1U directly. Execute the same procedure as “Note 2” for CMOS output.

Note 5. Vss terminal is signal ground. Be sure to connect it.

*** Please combine with this example of a connection circuit, and confirm a "Hardware manual" or a "Data sheet" of each microcomputer.**

3.4 M16C/1N group



Note 1. Power supply of S550-SFW1U is provided by a user target board via Vcc pins. Connect the power source of the board to the Vcc terminal directly. Usage of Vcc should be 3.3V plus or minus 3%, or 5V plus or minus 3%.

Note 2. Isolate TXD, RXD, SCLK, and BUSY terminals from the MCU peripheral circuit, in case the jumper, analog switching, three-state, etc. are built in when serial programming. Isolation can be omitted when the signals to the peripheral circuit are in output status when seen from the target CPU. When pulling-up these signals, the resistance should be more than 4.7k ohms.

Note 3. Execute the same procedure as “Note 2” for the CE terminal. You may also choose to pull it up and isolate without connecting to CE on S550-SFW1U. When it is not used in the peripheral circuit, you may fix CE at H level on the board directly.

Note 4. Execute the same procedure as “Note 2” for the SEL terminal. You may also choose to pull it down and isolate without connecting to EPM on S550-SFW1U. When it is not used in the peripheral circuit, you may fix SEL at L level on the board directly.

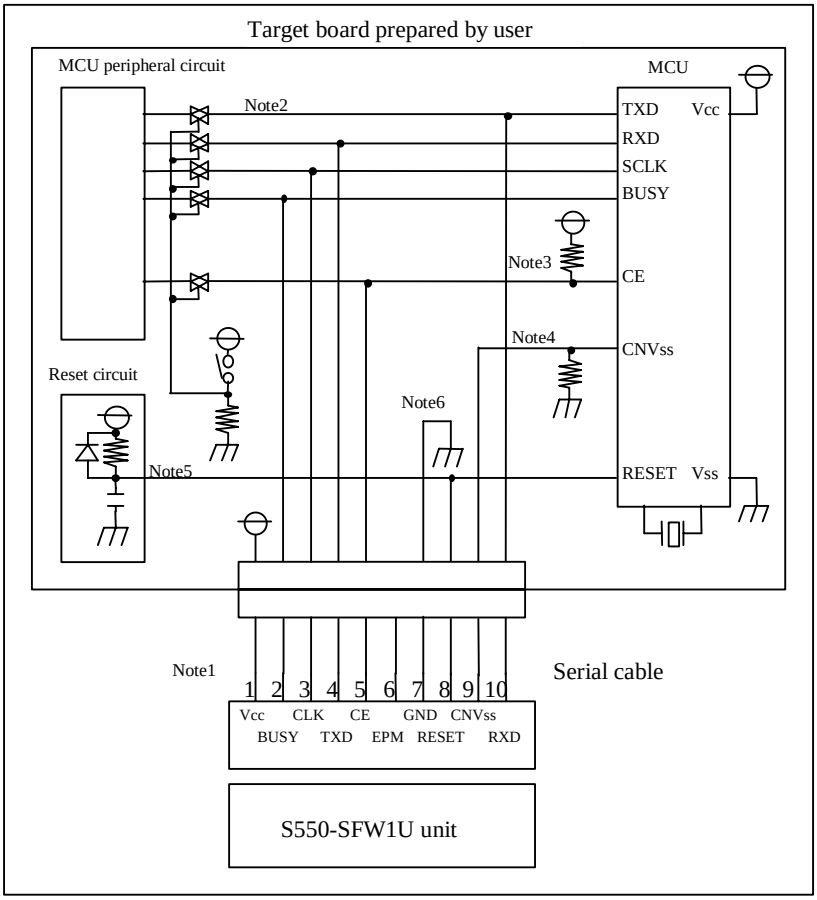
Note 5. Connect CNVss terminal to the CNVss on S550-SFW1U by pulling-down with 10K ohm resistance. Do not connect a capacitor to this terminal. For other circuits, please consult with us.

Note 6. When the reset circuit on your target board is CR delay circuit or open collector output, or it is a circuit with constant current load of less than tens of micron amperes, connect the terminal to the RESET terminal on S550-SFW1U directly. Execute the same procedure as “Note 2” for CMOS output.

Note 7. Vss terminal is signal ground. Be sure to connect it.

*** Please combine with this example of a connection circuit, and confirm a "Hardware manual" or a "Data sheet" of each microcomputer.**

3.5 M16C/22 group



Note 1. Power supply of S550-SFW1U is provided by a user target board via Vcc pins. Connect the power source of the board to the Vcc terminal directly. Usage of Vcc should be 3.3V plus or minus 3%, or 5V plus or minus 3%.

Note 2. Isolate TXD, RXD, SCLK, and BUSY terminals from the MCU peripheral circuit, in case the jumper, analog switching, three-state, etc. are built in when serial programming. Isolation can be omitted when the signals to the peripheral circuit are in output status when seen from the target CPU. When pulling-up these signals, the resistance should be more than 4.7k ohms.

Note 3. Execute the same procedure as “Note 2” for the CE terminal. You may also choose to pull it up and isolate without connecting to CE on S550-SFW1U. When it is not used in the peripheral circuit, you may fix CE at H level on the board directly.

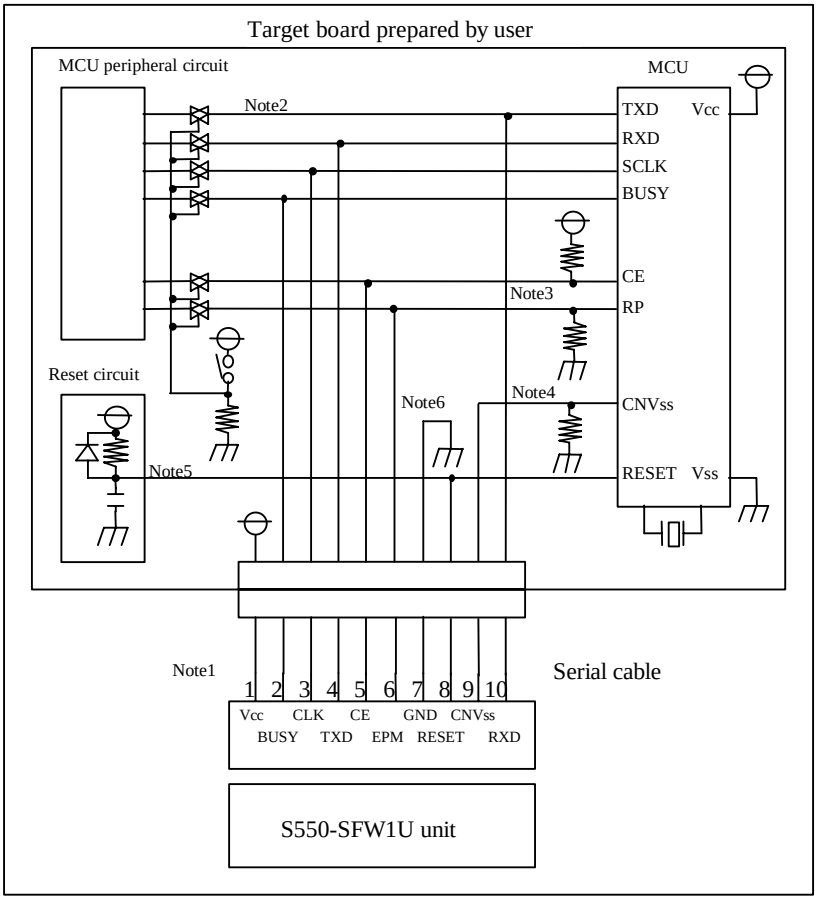
Note 4. Connect CNVss terminal to the CNVss on S550-SFW1U by pulling-down with 10K ohm resistance. Do not connect a capacitor to this terminal. For other circuits, please consult with us.

Note 5. When the reset circuit on your target board is CR delay circuit or open collector output, or it is a circuit with constant current load of less than tens of micron amperes, connect the terminal to the RESET terminal on S550-SFW1U directly. Execute the same procedure as “Note 2” for CMOS output.

Note 6. Vss terminal is signal ground. Be sure to connect it.

*** Please combine with this example of a connection circuit, and confirm a "Hardware manual" or a "Data sheet" of each microcomputer.**

3.6 M16C/26 groups



Note 1. Power supply of S550-SFW1U is provided by a user target board via Vcc pins. Connect the power source of the board to the Vcc terminal directly. Usage of Vcc should be 3.3V plus or minus 3%, or 5V plus or minus 3%.

Note 2. Isolate TXD, RXD, SCLK, and BUSY terminals from the MCU peripheral circuit, in case the jumper, analog switching, three-state, etc. are built in when serial programming. Isolation can be omitted when the signals to the peripheral circuit are in output status when seen from the target CPU. When pulling-up these signals, the resistance should be more than 4.7k ohms.

Note 3. Execute the same procedure as "Note 2" for the CE and RP terminal. Connect CE terminal to CE of S550-SFW1U, or connect RP terminal to EPM of S550-SFW1U. Or only isolation process by achieving "pull up/down" without the S550-SFW1U connection is also applicable. On-board direct fix is also available of the CE terminal for H level or the RP terminal for L level when these terminals are not connected.

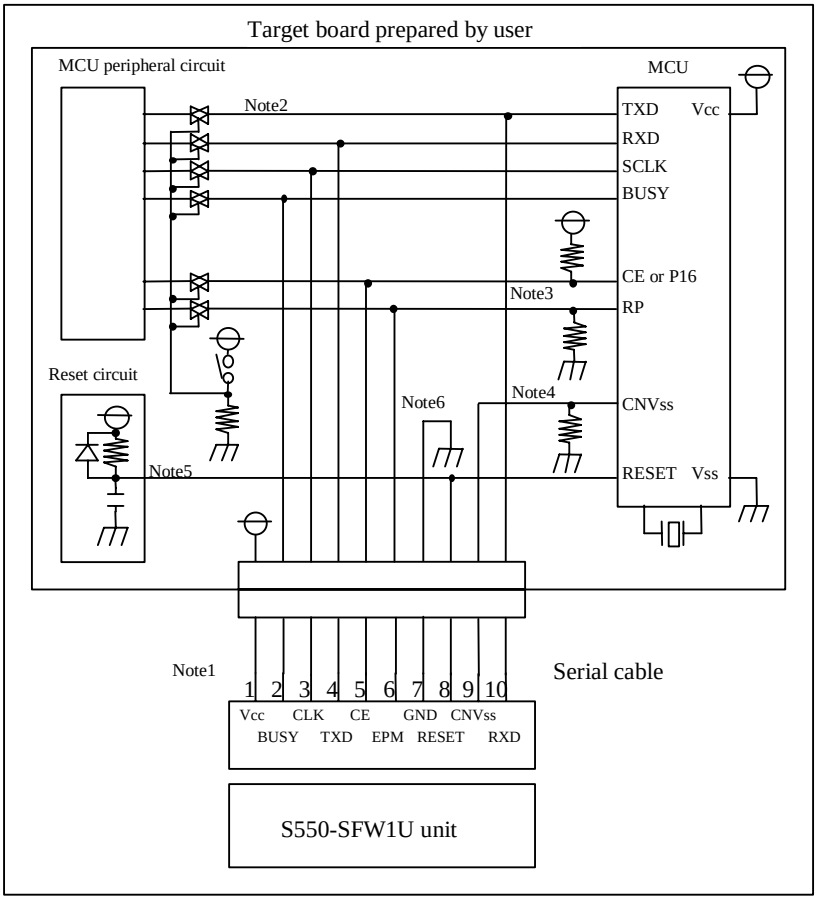
Note 4. Connect CNVss terminal to the CNVss on S550-SFW1U by pulling-down with 10K ohm resistance. Do not connect a capacitor to this terminal. For other circuits, please consult with us.

Note 5. When the reset circuit on your target board is CR delay circuit or open collector output, or it is a circuit with constant current load of less than tens of micron amperes, connect the terminal to the RESET terminal on S550-SFW1U directly. Execute the same procedure as "Note 2" for CMOS output.

Note 6. Vss terminal is signal ground. Be sure to connect it.

*** Please combine with this example of a connection circuit, and confirm a "Hardware manual" or a "Data sheet" of each microcomputer.**

3.7 M16C/28, and M16C/29 groups



Note 1. Power supply of S550-SFW1U is provided by a user target board via Vcc pins. Connect the power source of the board to the Vcc terminal directly. Usage of Vcc should be 3.3V plus or minus 3%, or 5V plus or minus 3%.

Note 2. Isolate TXD, RXD, SCLK, and BUSY terminals from the MCU peripheral circuit, in case the jumper, analog switching, three-state, etc. are built in when serial programming. Isolation can be omitted when the signals to the peripheral circuit are in output status when seen from the target CPU. When pulling-up these signals, the resistance should be more than 4.7k ohms.

Note 3. Execute the same procedure as "Note 2" for CE, P16 and RP terminal. Connect CE terminal to CE of S550-SFW1U, or connect P16 terminal to CE of S550-SFW1U and connect RP terminal to EPM of S550-SFW1U. Or only isolation process by achieving "pull up/down" without the S550-SFW1U connection is also applicable. On-board direct fix is also available of the CE terminal for H level, or the P16 terminal for H level and the RP terminal for L level when these terminals are not connected.

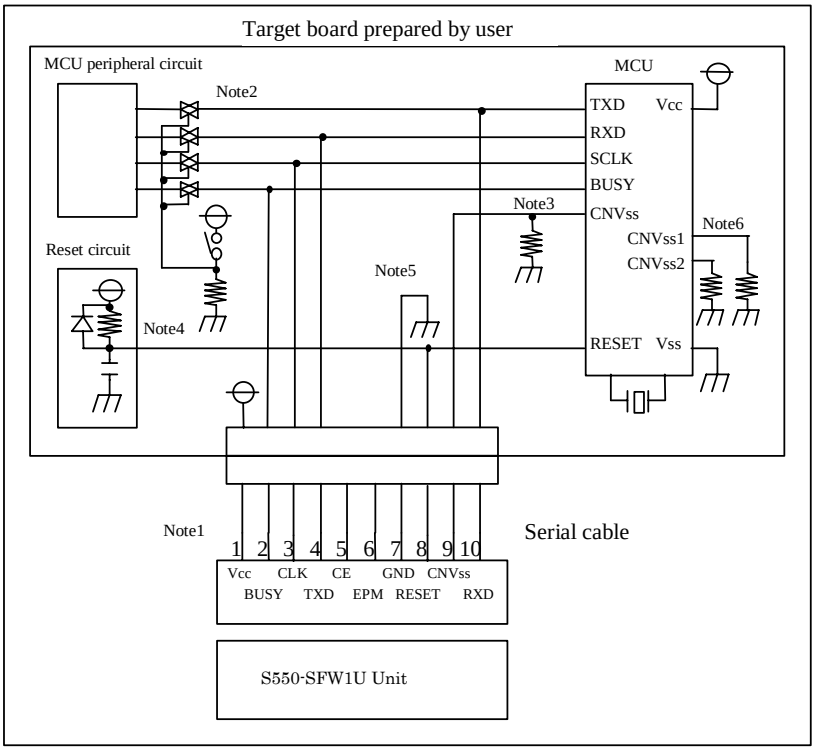
Note 4. Connect CNVss terminal to the CNVss on S550-SFW1U by pulling-down with 10K ohm resistance. Do not connect a capacitor to this terminal. For other circuits, please consult with us.

Note 5. When the reset circuit on your target board is CR delay circuit or open collector output, or it is a circuit with constant current load of less than tens of micron amperes, connect the terminal to the RESET terminal on S550-SFW1U directly. Execute the same procedure as "Note 2" for CMOS output.

Note 6. Vss terminal is signal ground. Be sure to connect it.

*** Please combine with this example of a connection circuit, and confirm a "Hardware manual" or a "Data sheet" of each microcomputer.**

3.8 M16C/2N group



Note 1. Power supply of S550-SFW1U is provided by a user target board via Vcc pins. Connect the power source of the board to the Vcc terminal directly. Usage of Vcc should be 3.3V plus or minus 3%, or 5V plus or minus 3%.

Note 2. Isolate TXD, RXD, SCLK, and BUSY terminals from the MCU peripheral circuit, in case the jumper, analog switching, three-state, etc. are built in when serial programming. Isolation can be omitted when the signals to the peripheral circuit are in output status when seen from the target CPU. When pulling-up these signals, the resistance should be more than 4.7k ohms.

Note 3. Connect CNVss terminal to the CNVss on S550-SFW1U by pulling-down with 10K ohm resistance. Do not connect a capacitor to this terminal. For other circuits, please consult with us.

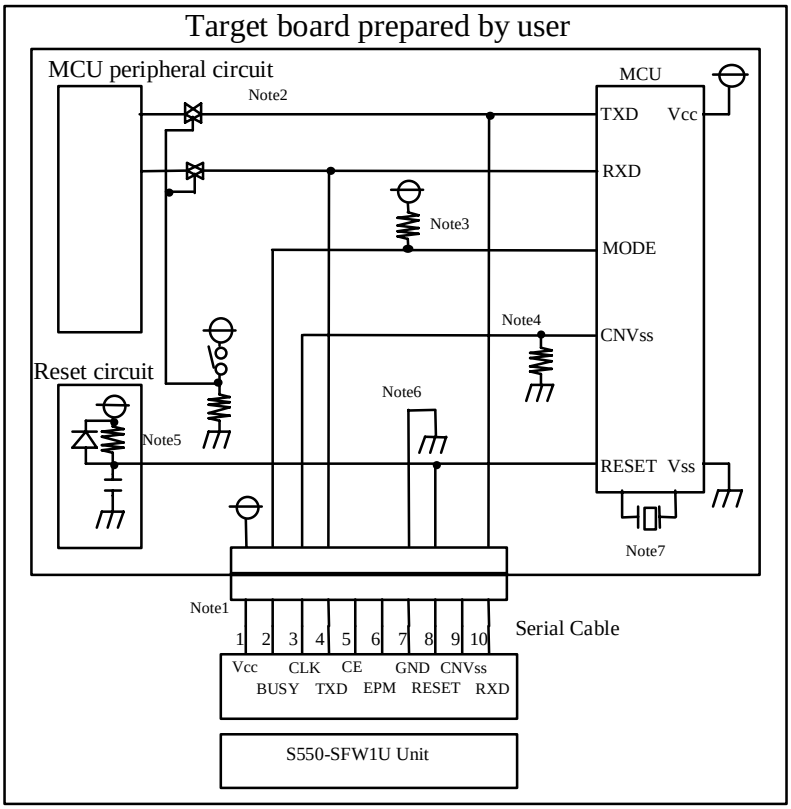
Note 4. When the reset circuit on your target board is CR delay circuit or open collector output, or it is a circuit with constant current load of less than tens of micron amperes, connect the terminal to the RESET terminal on S550-SFW1U directly. Execute the same procedure as “Note 2” for CMOS output.

Note 5. Vss terminal is signal ground. Be sure to connect it.

Note 6. CNVss1, CNvss2 terminals shall be connected to Vss on the target board you have prepared.

*** Please combine with this example of a connection circuit, and confirm a "Hardware manual" or a "Data sheet" of each microcomputer.**

3.9 R8C/10, R8C/11, R8C/12, R8C/13 groups



Note 1. Power supply of S550-SFW1U is provided by a user target board via Vcc pins. Connect the power source of the board to the Vcc terminal directly. Usage of Vcc should be 3.3V plus or minus 3%, or 5V plus or minus 3%.

Note 2. Isolate TXD, RXD, and MODE terminals from the MCU peripheral circuit, in case the jumper, analog switching, three-state, etc. are built in when serial programming. Isolation can be omitted when the signals to the peripheral circuit are in output status when seen from the target CPU. When pulling-up these signals, the resistance should be more than 4.7k ohms.

Note 3. Connect MODE terminal to the BUSY on S550-SFW1U by pulling-up with 10K ohm resistance. Do not connect a capacitor to this terminal.

Note 4. Connect CNVss terminal to the CNVss on S550-SFW1U by pulling-down with 10K ohm resistance. Do not connect a capacitor to this terminal. For other circuits, please consult with us.

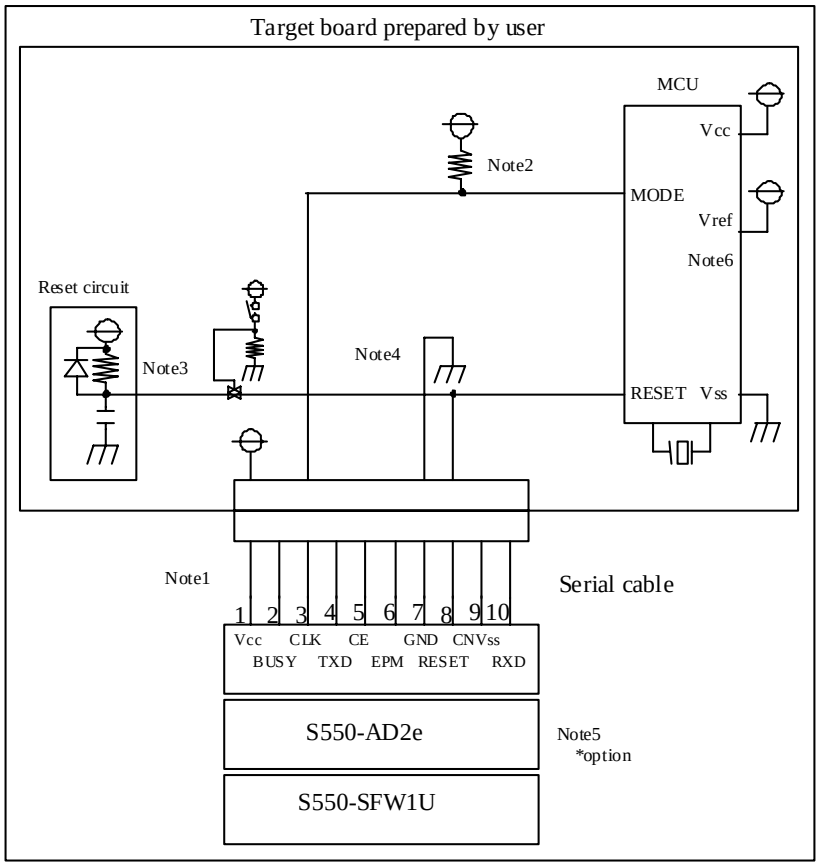
Note 5. When the reset circuit on your target board is CR delay circuit or open collector output, or it is a circuit with constant current load of less than tens of micron amperes, connect the terminal to the RESET terminal on S550-SFW1U directly. Execute the same procedure as “Note 2” for CMOS output.

Note 6. Vss terminal is signal ground. Be sure to connect it.

Note 7. It can program without an oscillation circuit.

*** Please combine with this example of a connection circuit, and confirm a "Hardware manual" or a "Data sheet" of each microcomputer.**

3.10 R8C/LX series



Note 1. Power supply of S550-SFW1U is provided by a user target board via Vcc pins. Connect the power source of the board to the Vcc terminal directly. Usage of Vcc should be 3.3V plus or minus 3%, or 5V plus or minus 3%.

Note 2. Connect MODE terminal to the CLK on S550-SFW1U by pulling-up with 10K ohm resistance. Do not connect a capacitor to this terminal.

Note 3. When the reset circuit on your target board is CR delay circuit or open collector output, or it is a circuit with constant current load of less than tens of micron amperes, connect the terminal to the RESET terminal on S550-SFW1U directly. Execute the same procedure as “Note 2” for CMOS output.

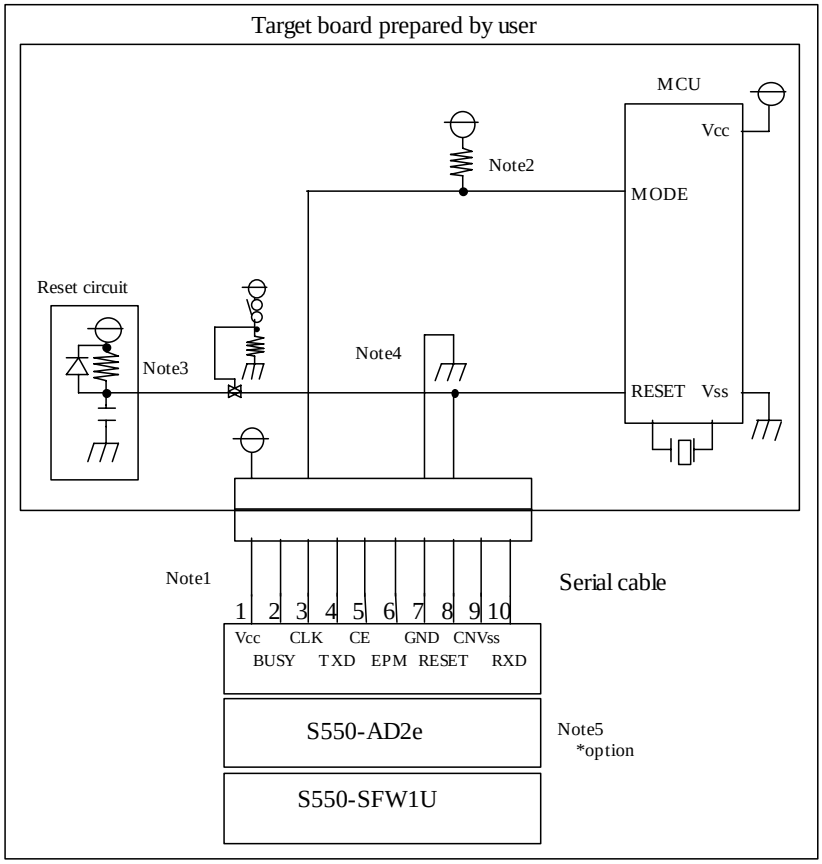
Note 4. The Vss terminal should be connected since it is signal ground.

Note 5. An exclusive programming connector ‘S550-AD2e’ is necessary.

Note 6. Connect Vref terminal to the VCC.

*** Please combine with this example of a connection circuit, and confirm a "Hardware manual" or a "Data sheet" of each microcomputer.**

3.11 R8C family other than R8C/10, R8C/11, R8C/12, R8C/13 groups and R8C/LX series



Note 1. Power supply of S550-SFW1U is provided by a user target board via Vcc pins. Connect the power source of the board to the Vcc terminal directly. Usage of Vcc should be 3.3V plus or minus 3%, or 5V plus or minus 3%.

Note 2. Connect MODE terminal to the BUSY on S550-SFW1U by pulling-up with 10K ohm resistance. Do not connect a capacitor to this terminal.

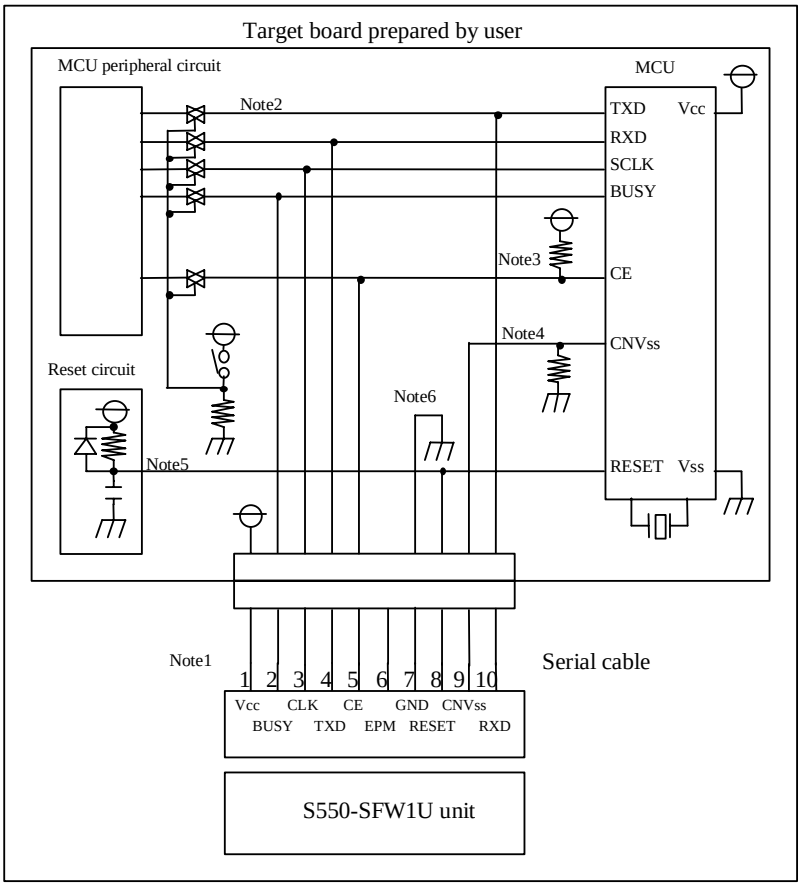
Note 3. When the reset circuit on your target board is CR delay circuit or open collector output, or it is a circuit with constant current load of less than tens of micron amperes, connect the terminal to the RESET terminal on S550-SFW1U directly. Execute the same procedure as "Note 2" for CMOS output.

Note 4. The Vss terminal should be connected since it is signal ground.

Note 5. An exclusive programming connector 'S550-AD2e' is necessary.

*** Please combine with this example of a connection circuit, and confirm a "Hardware manual" or a "Data sheet" of each microcomputer.**

3.12 Eight-bit Microcomputer, 740 Family - 7641, 7643, 38C2, 38K0, and 38K2 groups



Note 1. Power supply of S550-SFW1U is provided by a user target board via Vcc pins. Connect the power source of the board to the Vcc terminal directly. Usage of Vcc should be 3.3V plus or minus 3%, or 5V plus or minus 3%.

Note 2. Isolate TXD, RXD, SCLK, and BUSY terminals from the MCU peripheral circuit, in case the jumper, analog switching, three-state, etc. are built in when serial programming. Isolation can be omitted when the signals to the peripheral circuit are in output status when seen from the target CPU. When pulling-up these signals, the resistance should be more than 4.7k ohms.

Note 3. Execute the same procedure as “Note 2” for the CE terminal. You may also choose to pull it up and isolate without connecting to CE on S550-SFW1U. When it is not used in the peripheral circuit, you may fix CE at H level on the board directly.

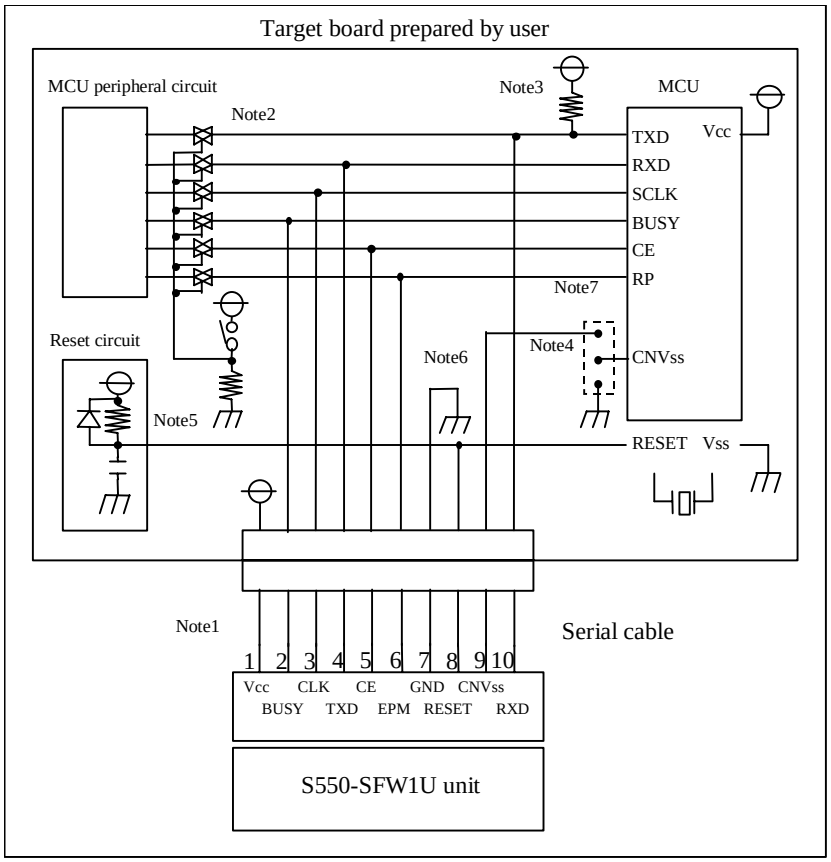
Note 4. Connect CNVss terminal to the CNVss on S550-SFW1U by pulling-down with 10K ohm resistance. Do not connect a capacitor to this terminal. For other circuits, please consult with us.

Note 5. When the reset circuit on your target board is CR delay circuit or open collector output, or it is a circuit with constant current load of less than tens of micron amperes, connect the terminal to the RESET terminal on S550-SFW1U directly. Execute the same procedure as “Note 2” for CMOS output.

Note 6. Vss terminal is signal ground. Be sure to connect it.

*** Please combine with this example of a connection circuit, and confirm a "Hardware manual" or a "Data sheet" of each microcomputer.**

3.13 Eight-bit Microcomputer, 740 Family 7542 group



Note 1. Power supply of S550-SFW1U is provided by a user target board via Vcc pins. Connect the power source of the board to the Vcc terminal directly. Usage of Vcc should be 3.3V plus or minus 3%, or 5V plus or minus 3%.

Note 2. Isolate TXD, RXD, SCLK, and BUSY terminals from the MCU peripheral circuit, in case the jumper, analog switching, three-state, etc. are built in when serial programming. Isolation can be omitted when the signals to the peripheral circuit are in output status when seen from the target CPU. When pulling-up these signals, the resistance should be more than 4.7k ohms.

Note 3. Execute the same procedure as “Note 2” for the TXD terminal. Pull it up and connect it to RXD on S550-SFW1U.

Note 4. In the serial write mode, connect CNVss termial of S550-SFW1U and disconnect Vss termial, from the MCU by jumper switch. In the normal Microcomputer mode, disconnect CNVss termial of S550-SFW1U and connect Vss termial, from the MCU by jumper switch.

Note 5. When the reset circuit on your target board is open collector output, or it is a circuit with constant current load of less than tens of micron amperes, connect the terminal to the RESET terminal on S550-SFW1U directly. Execute the same procedure as “Note 2” for CMOS output and CR delay circuit.

Note 6. Vss terminal is signal ground. Be sure to connect it.

Note 7. Execute the same procedure as “Note 2” for CE and RP terminals. You may also choose to pull-up or pull-down each and isolate without connecting to CE and EPM on S550-SFW1U. When they are not used in the peripheral circuit, you may fix CE at H level and RP at L level on the board directly.

*** Please combine with this example of a connection circuit, and confirm a "Hardware manual" or a "Data sheet" of each microcomputer.**

4. Connections

S550-SFW1U has three types of connections:

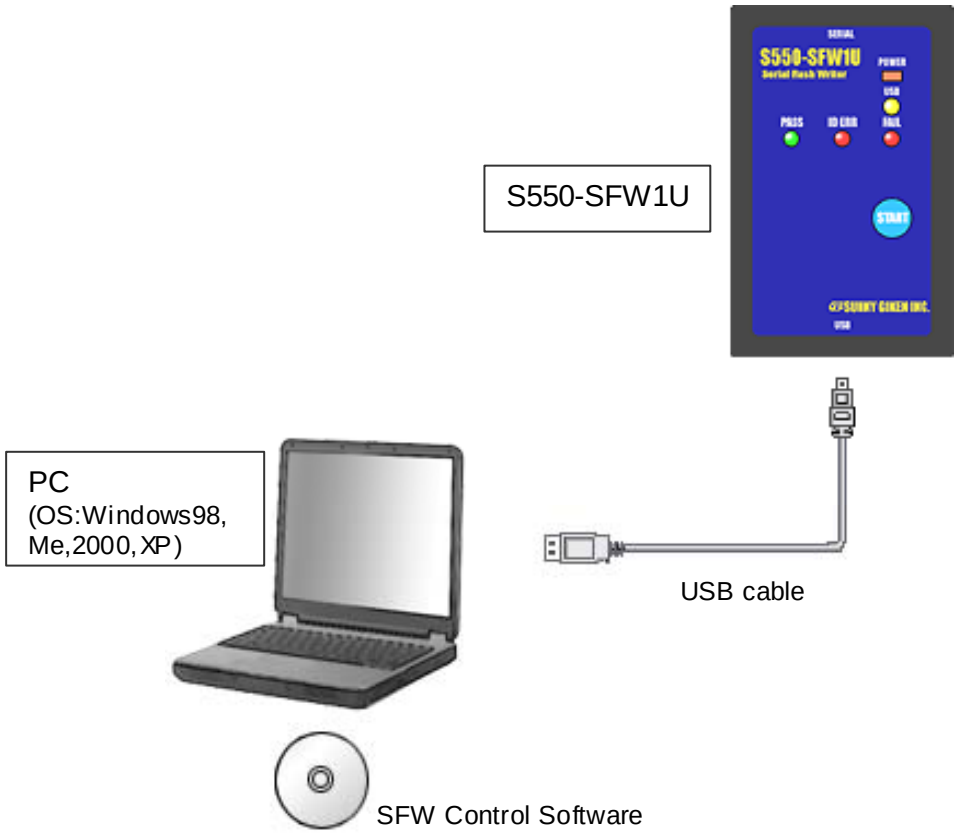
1) Connection for Downloading/Uploading
   This is a connection for downloading program data from the control software to S550-SFW1U or uploading data from S550-SFW1U to the control software.

2) Connection for stand-alone programming
   This is a connection for programming the target board from S550-SFW1U.

3) Connection for remote programming
   This is a connection for programming the target board from the control software through S550-SFW1U.

4.1 Connection for Download / Upload

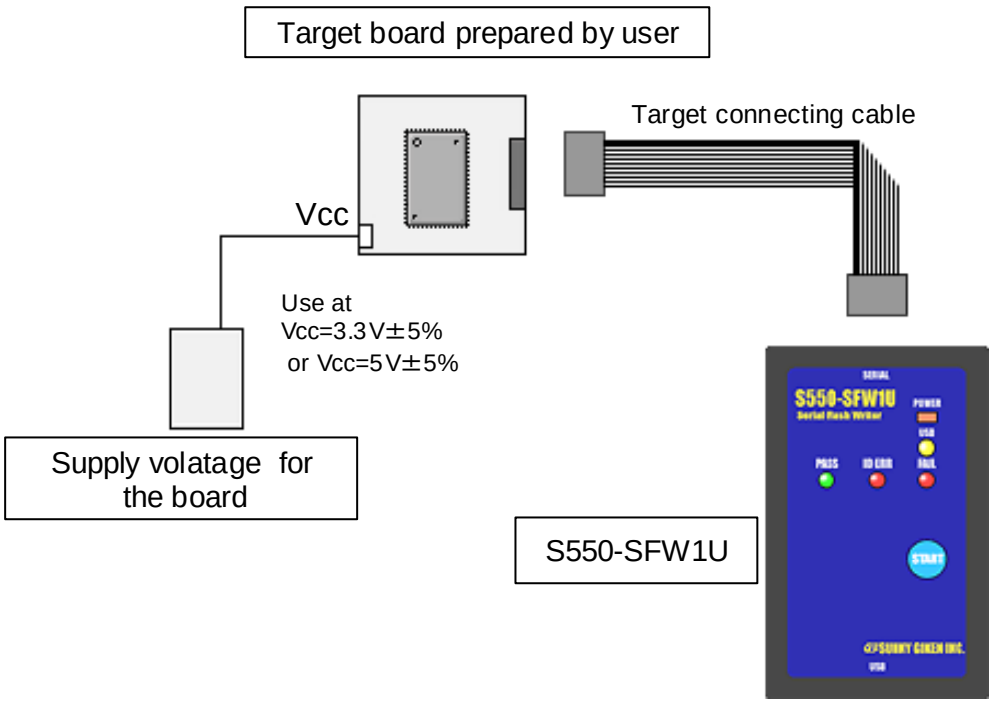
The connection when you download data to S550-SFW1U from the PC using the control software, or upload data to the control software from S550-SFW1U, is illustrated below.



* Turning ON/OFF the power of S550-SFW1U is done by plugging/unplugging the USB cable.
* Do not unplug the USB cable during the communication with the control software.

4.2 Connection for Stand-alone Programming

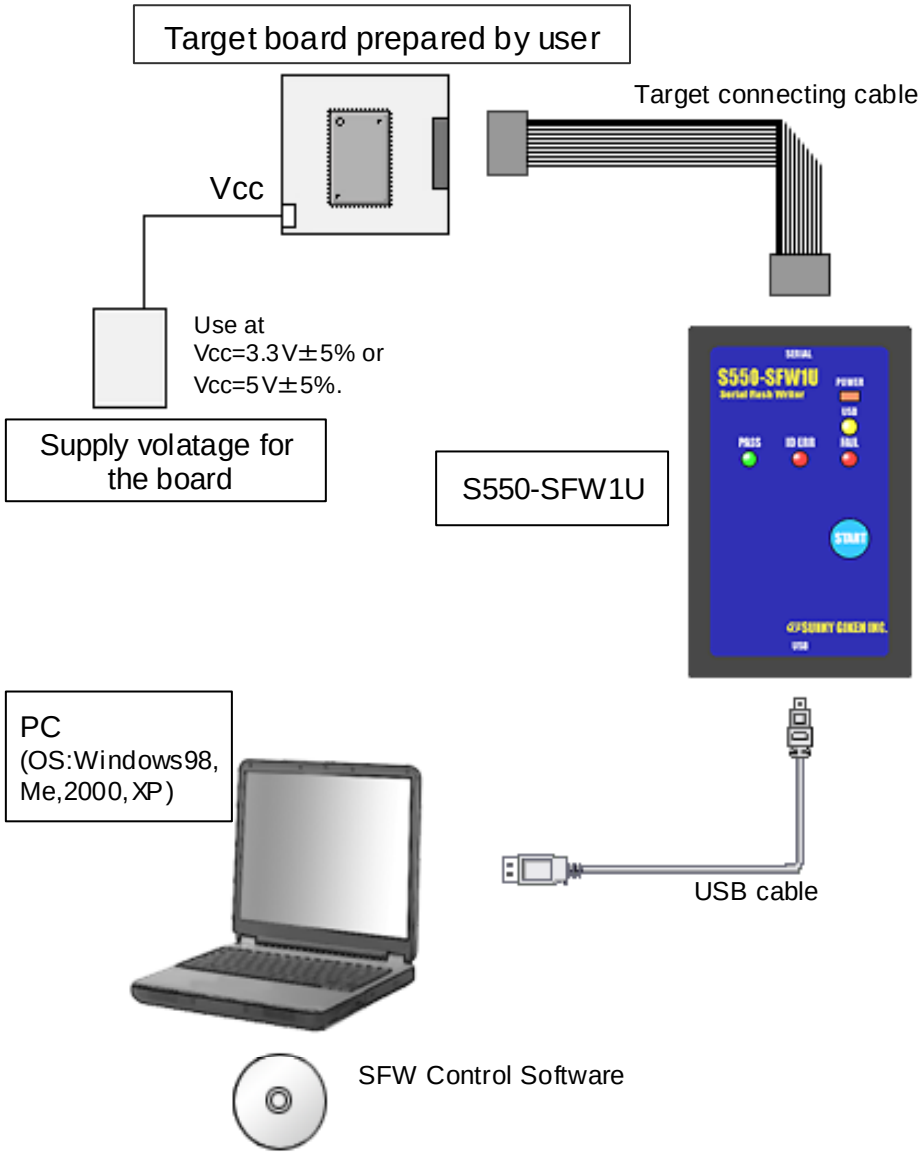
The connection when you program from the lone S550-SFW1U to the target (stand-alone programming) is illustrated below.



* Turning ON/OFF the power of S550-SFW1U is done by turning ON/OFF the supply voltage for the board.

4.3 Connection for Remote Programming

The connection when you program remotely to the target from the PC using the control software though S550-SFW1U is illustrated below.



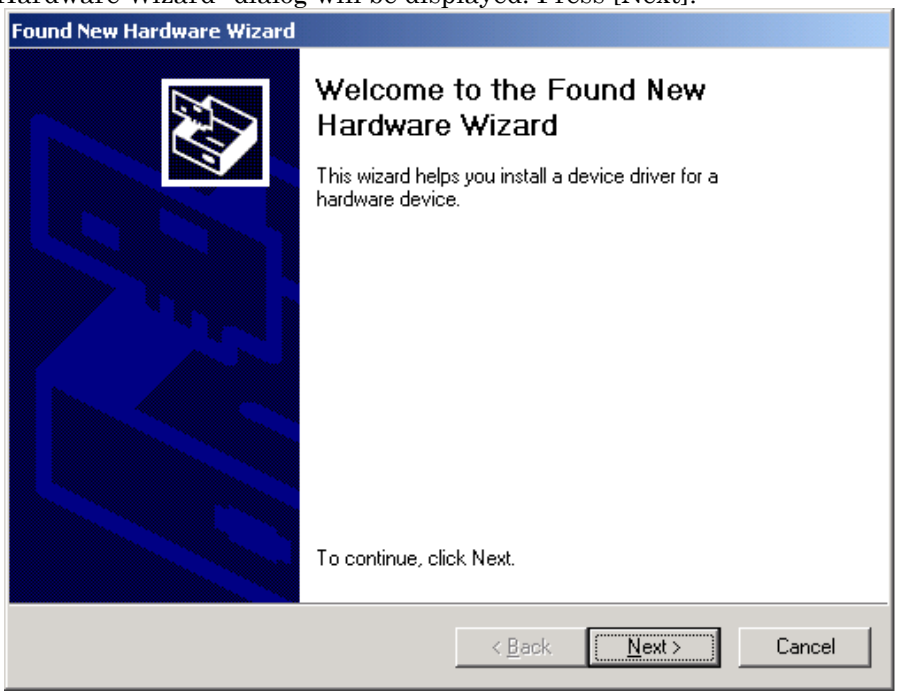
* Turning ON/OFF the power of S550-SFW1U is done by plugging/unplugging the USB cable and turning ON/OFF the power voltage for the board. When one of the power source is ON, S550-SFW1U will be ON.
* Do not unplug the USB cable during the communication with the control software.

5. Setting Up

5.1 Installing USB driver

When S550-SFW1U is connected to a PC by USB, Windows automatically detects a new hardware and creates drive information database. Following describes how to install the USB driver.

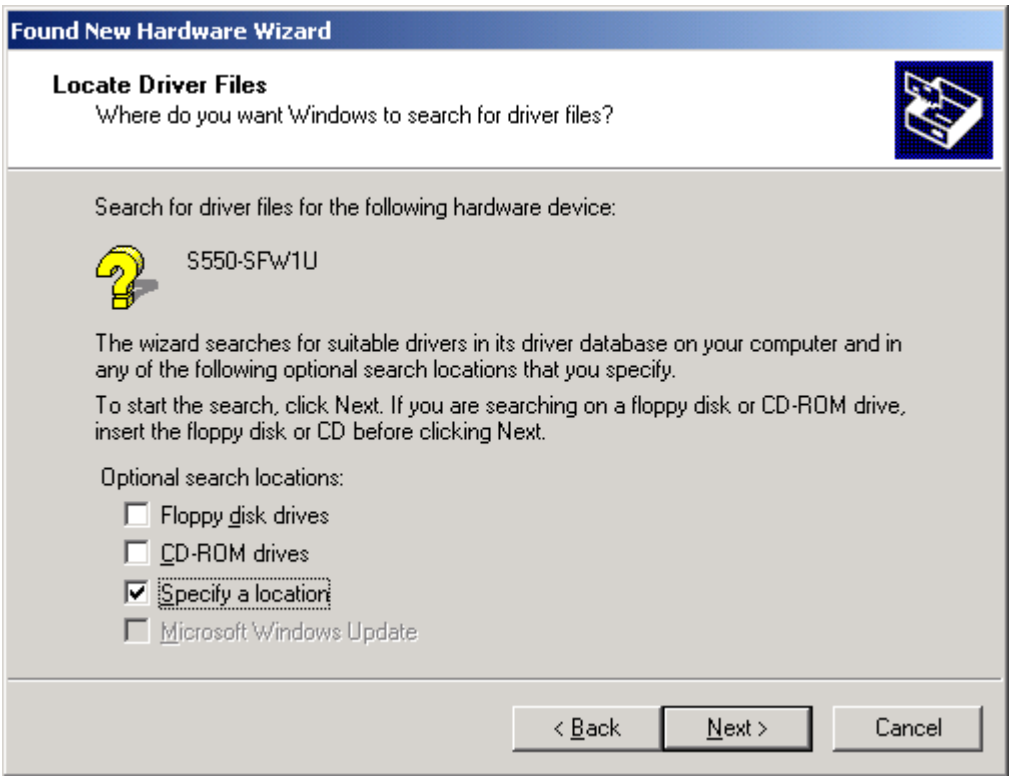
i) ”Add New Hardware Wizard” dialog will be displayed. Press [Next].


Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install a device driver for a hardware device.
To continue, click Next.
< Back
Next >
Cancel

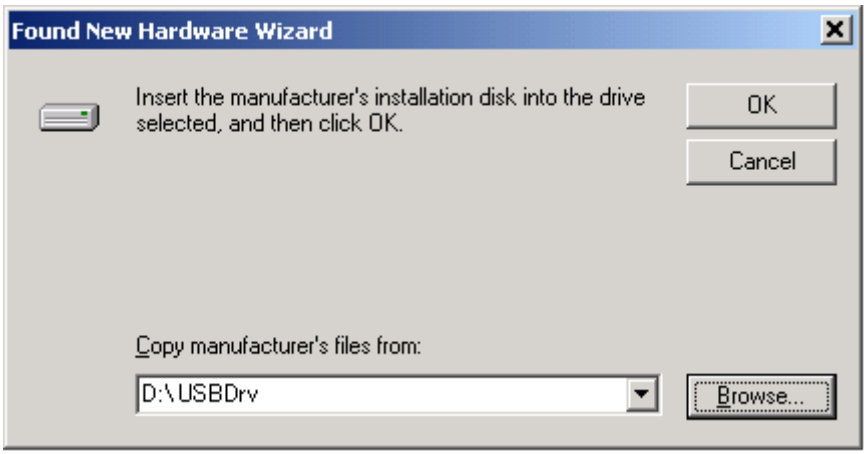
ii) Select ”Search for a suitable driver for my device” and press [Next].

Found New Hardware Wizard
Install Hardware Device Drivers
A device driver is a software program that enables a hardware device to work with an operating system.
This wizard will complete the installation for this device:
S550-SFW1U
A device driver is a software program that makes a hardware device work. Windows needs driver files for your new device. To locate driver files and complete the installation click Next.
What do you want the wizard to do?
Search for a suitable driver for my device (recommended)
Display a list of the known drivers for this device so that I can choose a specific driver
< Back
Next >
Cancel

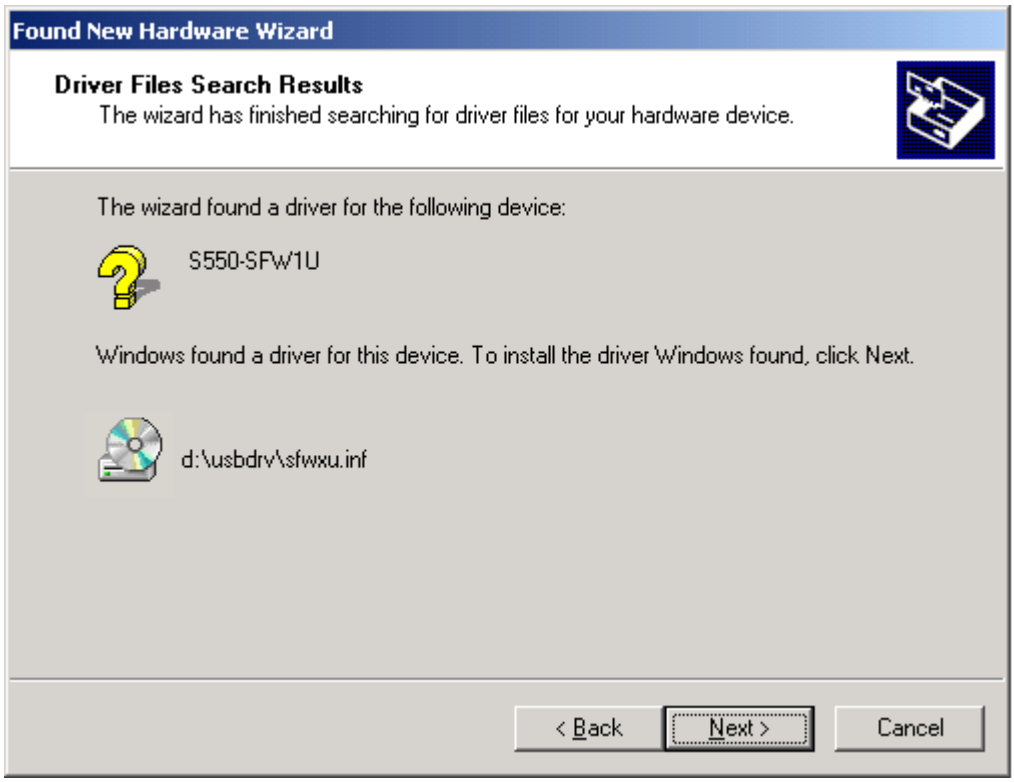
iii) Select “Specify a location” and press [Next].


Found New Hardware Wizard
Locate Driver Files
Where do you want Windows to search for driver files?
Search for driver files for the following hardware device:
S550-SFW1U
The wizard searches for suitable drivers in its driver database on your computer and in any of the following optional search locations that you specify.
To start the search, click Next. If you are searching on a floppy disk or CD-ROM drive, insert the floppy disk or CD before clicking Next.
Optional search locations:
Floppy disk drives
CD-ROM drives
Specify a location
Microsoft Windows Update
< Back
Next >
Cancel

iv) Specify “USBDrv” folder in the attached CD-ROM for the area to copy files from.



v) Press [Next] when “S550-SFW1U” is displayed.


Found New Hardware Wizard
Driver Files Search Results
The wizard has finished searching for driver files for your hardware device.
The wizard found a driver for the following device:
S550-SFW1U
Windows found a driver for this device. To install the driver Windows found, click Next.
d:\usbdrv\sfwxu.inf
< Back
Next >
Cancel

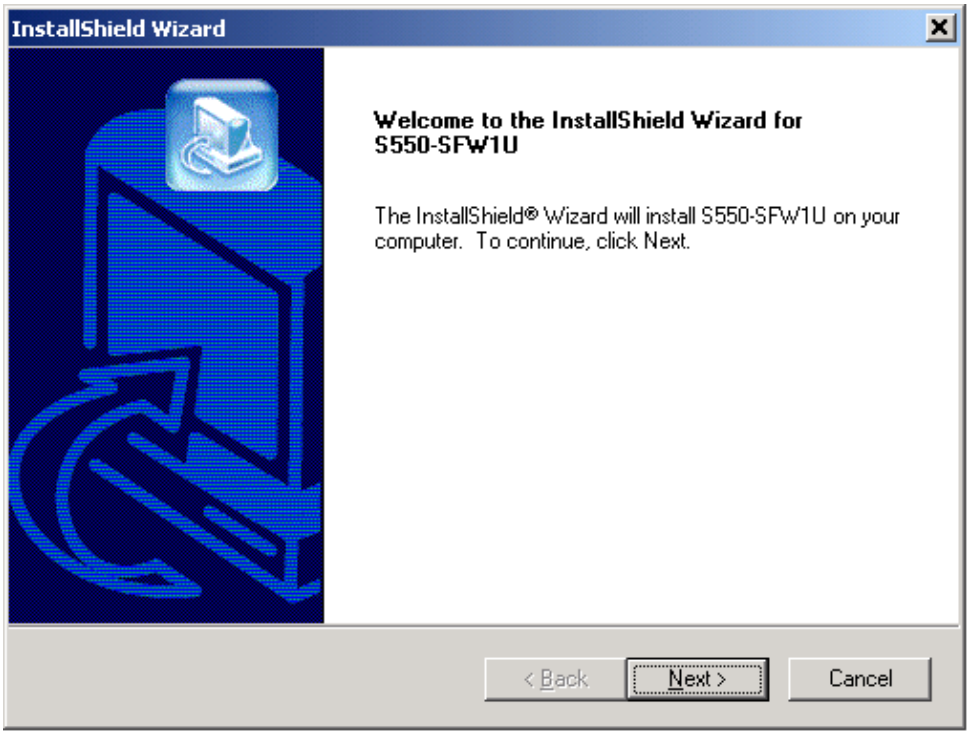
vi) The driver files will be automatically copied and installation will be completed.

5.2 Installing Control Software

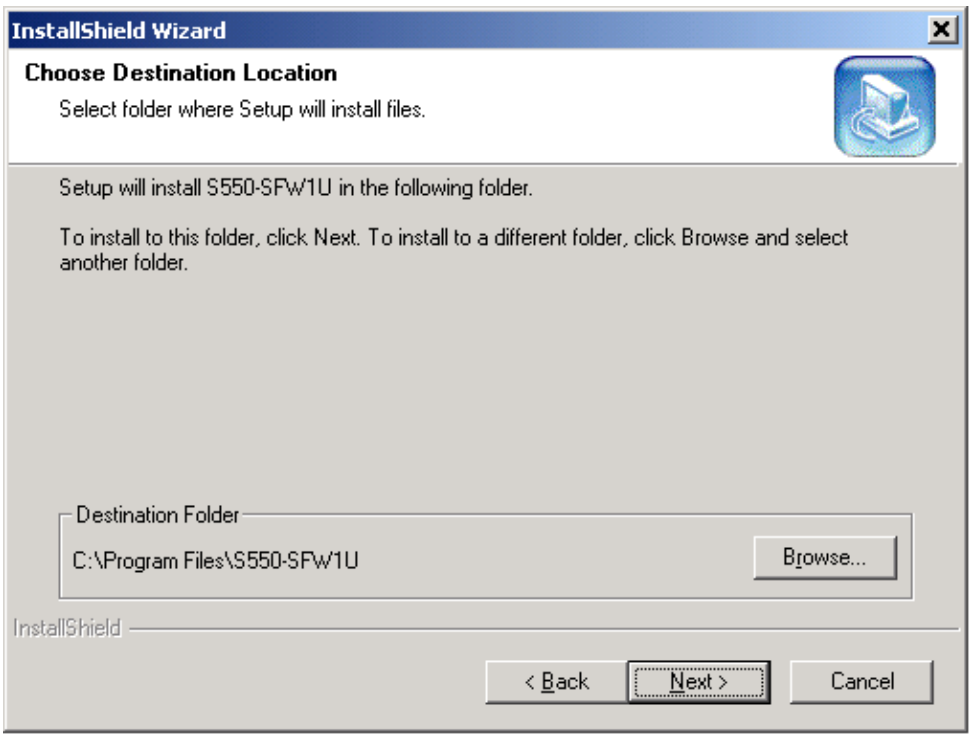
Using the attached CD-ROM, execute “Setup.exe” in “Software” folder.

The following is the software installation procedure.

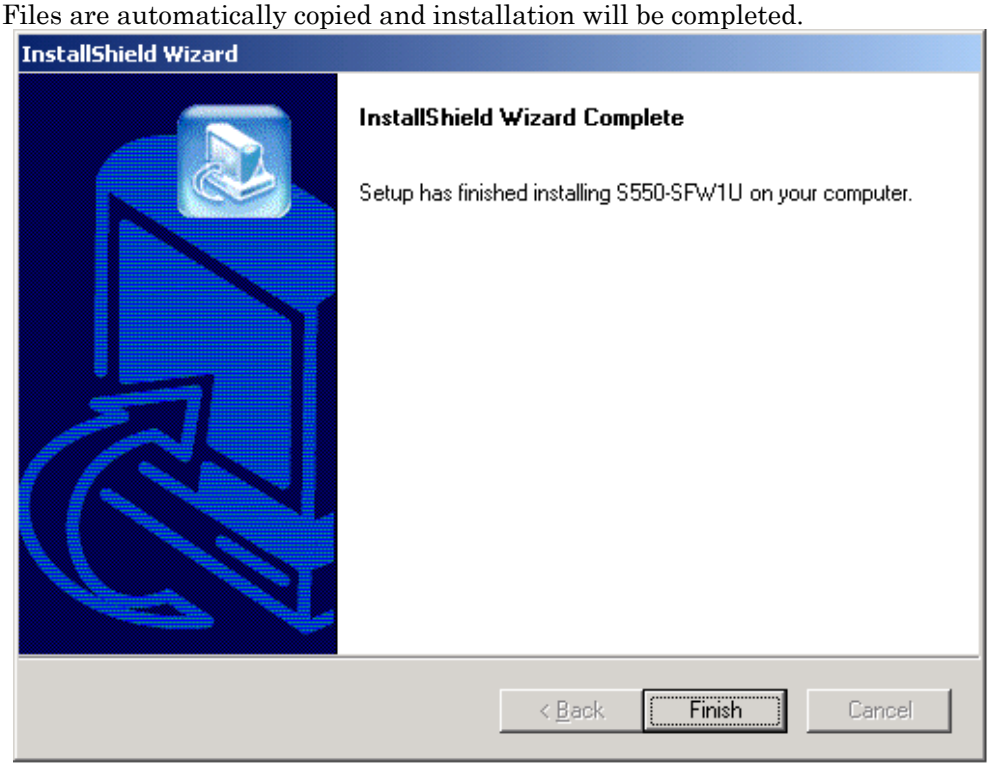
i) When the following dialog is displayed, press [Next].


InstallShield Wizard
Welcome to the InstallShield Wizard for S550-SFW1U
The InstallShield® Wizard will install S550-SFW1U on your computer. To continue, click Next.
< Back
Next >
Cancel

ii) Select the destination folder and press [Next].


InstallShield Wizard
Choose Destination Location
Select folder where Setup will install files.
Setup will install S550-SFW1U in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\S550-SFW1U
Browse...
InstallShield
< Back
Next >
Cancel

iii) Files are automatically copied and installation will be completed.

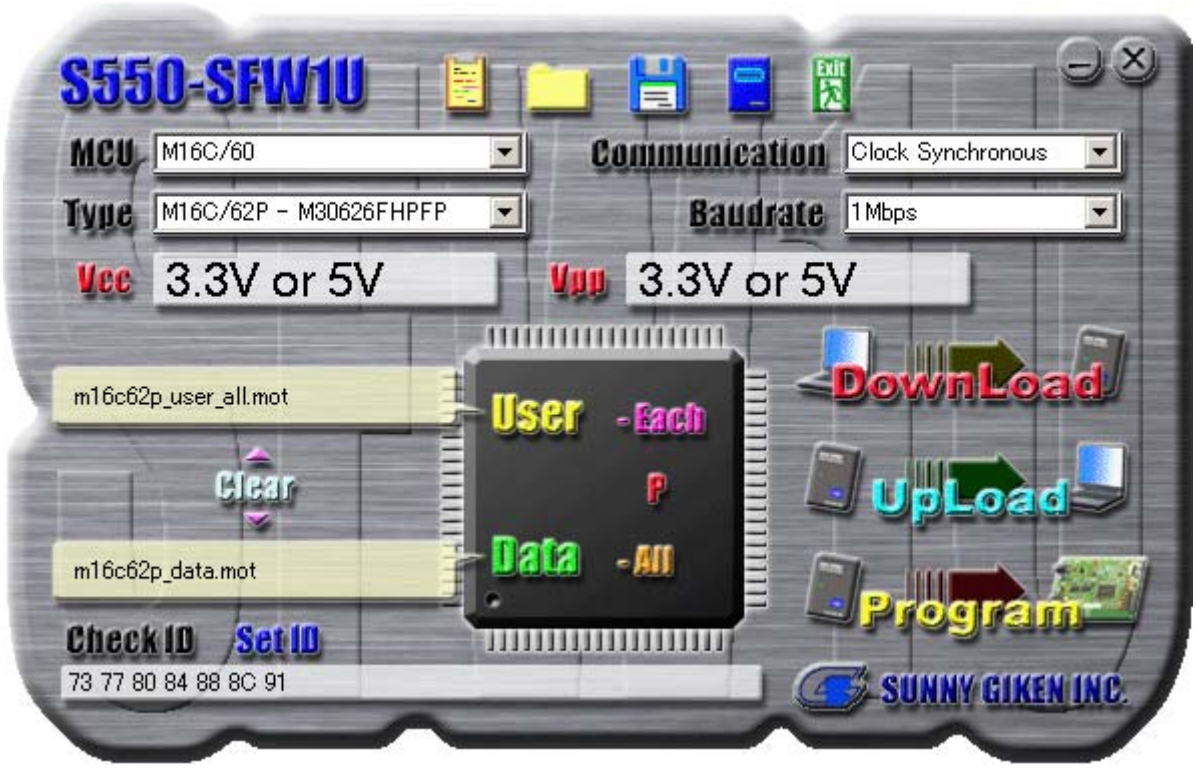


5.3 Uninstalling Control Software

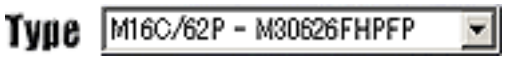
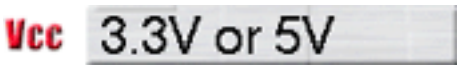
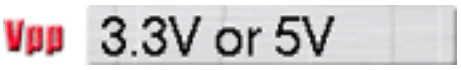
From the Control Panel, open ”Add/Remove Programs” and select “S550-SFW1U” in the “Install/Uninstall”. Press [Add/Remove] to execute the uninstallation of the control software.

6. Control Software

6.1 Main Screen



Items	Descriptions
S550-SFW1U	**"About SFW1U" button** Displays information on S550-SFW1U control software(version, etc.).
	"Initialization" button Initializes set data in internal memory of S550-SFW1U (all clear). *** Same function as pressing and holding the main start switch of S550-SFW1U for 5 seconds.**
	"Open" button Reads control software setting information from a file(.sts).
	"Save" button Saves setting information on the current control software screen in to a file(.sts).
	"Manual" button Displays S550-SFW1U operation manual (this document).
	"Exit" button Quits the control software.

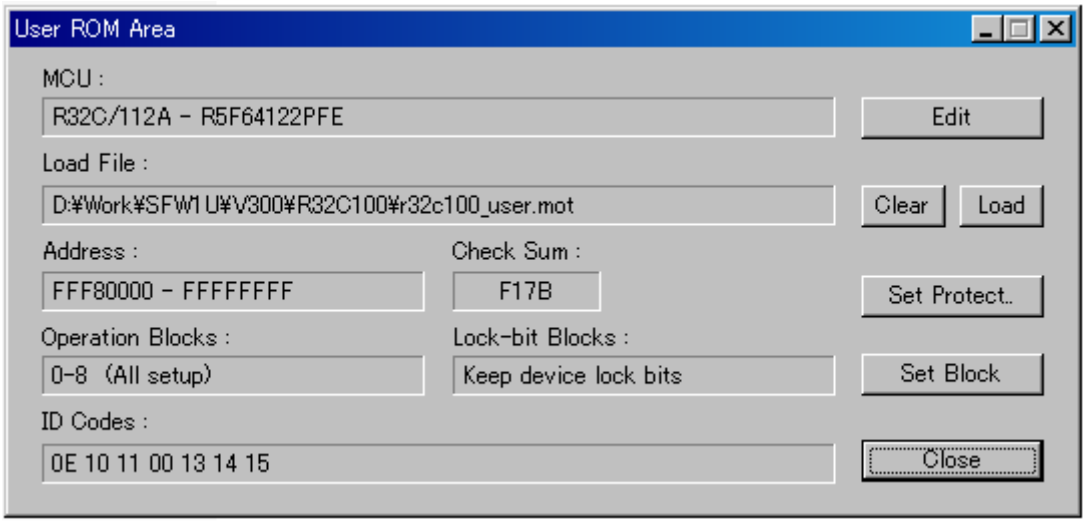
Items	Descriptions
	"MCU series" list box You can select the target device series to program.
	**"MCU type" list box** You can select the device name among the MCU series you selected in the above list box.
	"Communication type" list box You can select the communication type. *R8C/Tiny: Single-wire is the only option. Others: Clock Synchronous is the only option.
	"Communication speed" list box You can select the communication speed. (38.4Kbps, 57.6Kbps, 115.2Kbps, 256Kbps, 500Kbps, 1Mbps)
	**"Vcc" label** Displays voltage required for the device to operate.
	**"Vpp" label** Displays voltage required for programming

Items	Descriptions
	"User ROM area program file" label The name of the program data file, which is to be programmed, is displayed in the User ROM area in the left balloon.
	"User" button Click to select and edit a program data (Refer to "6.2 Program Data Selecting Screen").
	"Data ROM area program file" label The name of the program data file, which is to be programmed in the Data ROM area, is displayed in the left balloon. *selected device which name is displayed with PROM2 after device name in "MCU Type", will be able to write in program ROM2 Area.
	"Data" button Click to select and edit a program data (Refer to"6.2 Program Data Selecting Screen").
	"-All" label Is displayed when all ROM area programming is set.
	"-Each" label Is displayed when only partial ROM area programming is set.
	"Protect" label "P" is displayed when "ROM Code Protection" which disables reading ROM code is set.
	"Clear" button Clears the loaded program data from the screen (both User ROM and Data ROM areas).

Items	Descriptions
	"ID" label Displays the ID of the program data to be programmed.
	"Set ID" button Click to edit ID (Refer to "6.6 ID Setting Screen).

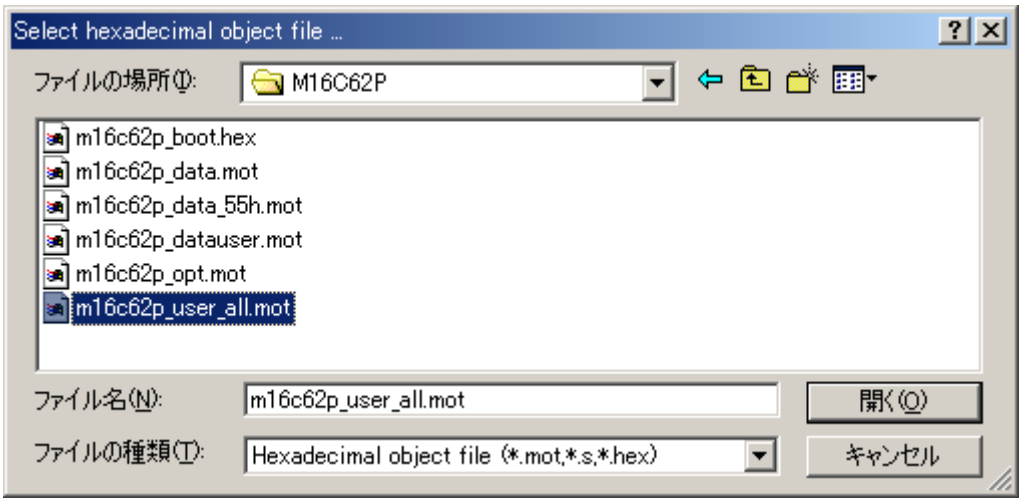
Items	Descriptions
	"Download" button Downloads the set program data into S550-SWF1U. *When there are matching data on S550-SFW1U and the control software, downloading will not be performed.
	"Upload" button Uploads saved program data from S550-SFW1U onto the control software. * When there are matching data on S550-SFW1U and the control software, uploading will not be performed.
	"Program" button Programs the saved program data in S550-SFW1U into the target remotely. *When the program data in S550-SFW1U and data on control software do not match, it will download first then programs.

6.2 Program Data Selecting Screen



Items	Descriptions
MCU:	**"MCU" label** Displays current device.
Load File:	**"Load File" label** Displays programming program file name with path.
Address:	**"Address" label** Displays ROM area address.
Check Sum:	**"Check Sum" label** Displays checksum of the program data for each area. (i.e., Lower 2 byte of the data which is the total sum of adding every 1 byte. Program data at the addresses not contained in the file is calculated as FFh.)
Operation Blocks:	**"Operation Blocks" label** Displays operation block (blocks to be programmed) settings.
Lock-bit Blocks:	**"Lock-bit Blocks" label** Displays lock-bit block settings.
ID Codes:	**"ID Codes" label** Displays ID code for verification of devices (When program data is loaded in the User ROM area, the ID of the data will be displayed).
Edit	**"Edit" button** Opens the program data edit screen (Refer to "6.4 Program Data Edit Screen").
Clear	**"Clear" button** Clears loaded program data.
Load	**"Load" button** Opens program data file (Refer to "6.3 Loaded program File Selecting screen").
Set Protect	**"Set Protect"button** Opens protect setting screen (Refer to "6.7 Protect Setting Screen").
Set Block	**"Set Block" button** Opens block setting screen (Refer to "6.5 Block Setting Screen").
Close	**"Close" button** Closes the screen.

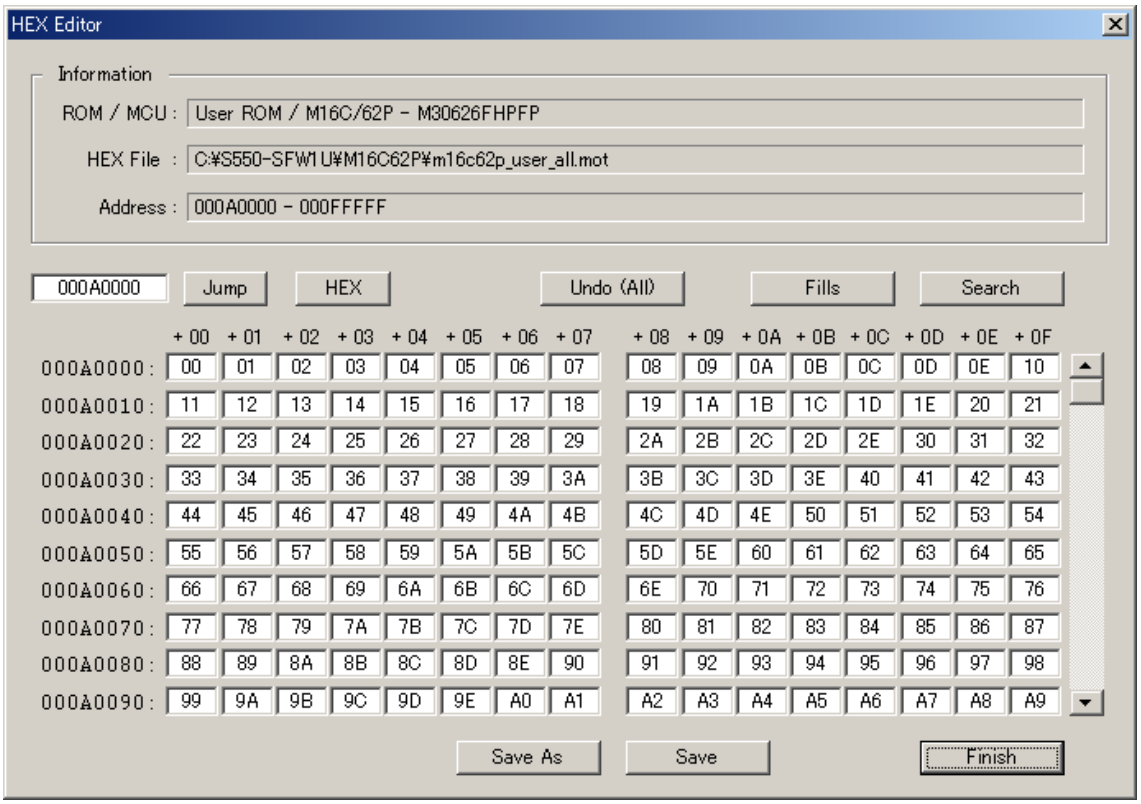
6.3 Loaded Program File Selecting Screen



When loading is completed successfully, you will see the loaded file name with path in “Load File Label” in the “Program Data Selecting Screen”.

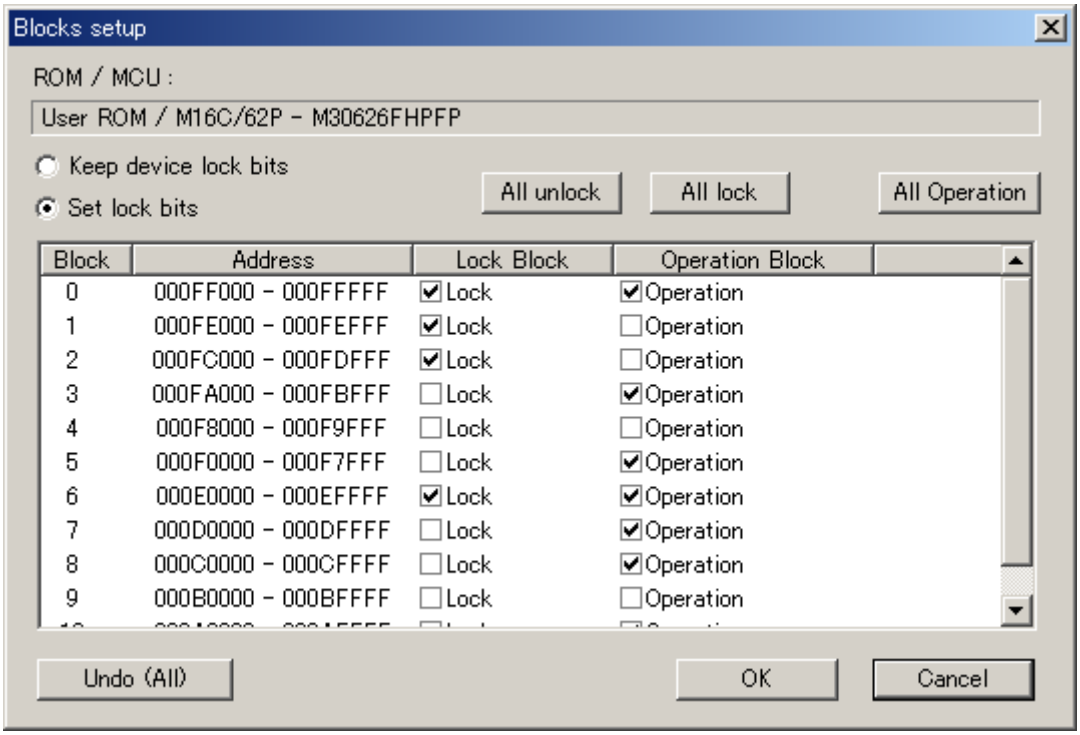
* Loadable file formats: Intel HEX format (*.hex), Motorola S format (*.mot, *.s)

6.4 Program Data Editing Screen



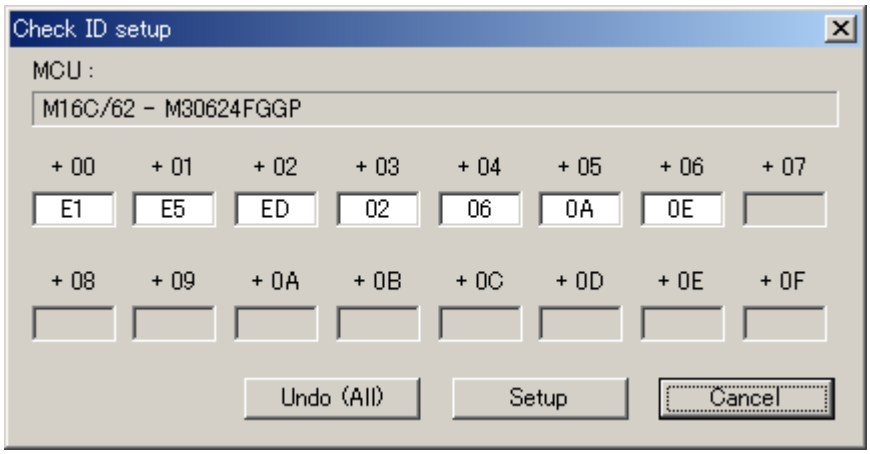
Items	Descriptions
ROM / MCU:	**"ROM / MCU" label** Displays current ROM area(User / Data) and device name.
HEX File:	**"HEX File" label** Displays programmed program file name with path.
Address:	**"Address" label** Displays address range in the ROM area.
Jump	**"Jump" button** Jumps to the address entered in the text box on the left.
HEX (ASCII)	**"HEX"/"ASCII" button** Switches data display between HEX display and ASCII display.
Undo(All)	**"Undo(All)" button** Undoes the settings.
Fills	**"Fills" button** Fills all the specified area with the same data.
Search	**"Search" button** Jumps to the address where the specified data is set.
Save As	**"Save As" button** Saves the current editing data by creating a new file with a new name.
Save	**"Save" button** Saves the current editing data by overwriting the existing file.
Finish	**"Finish" button** Ends editing and closes the screen.

6.5 Block Setting Screen



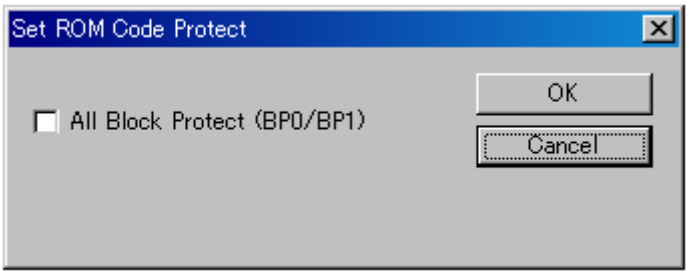
Items	Descriptions
ROM / MCU	**"ROM / MCU" button** Displays current ROM area(User / Data) and device name.
Keep device lock bits	**"Keep device lock bits" "Set lock bits" Radio buttons** **Keep device lock bits:** Keeps the previous lock status. **Set lock bits:** Sets a new lock-bit setting (using the Lock Block check boxes on the list).
Set lock bits	
All unlock	**"All unlock" button** Clears all the checkboxes for Lock Block on the list.
All lock	**"All lock" button** Checks all the boxes for Lock block on the list.
All Operation	**"All Operation" button** Checks all the boxes for Operation Block on the list.
Lock Block	**"Lock Block" checkbox** Sets the lock/unlock setting for every block.
Operation Block	**"Operation Block" checkbox** Sets the programming-enabled/disabled setting for every block. *Only the device of R8C/3X,R8C/LX is different from a real block number.
Undo(All)	**"Undo (All)" button** Undoes the settings.
OK	**"OK" button** Reflects the setting content and closes the screen.
Cancel	**"Cancel" button** Ignores the setting content and closes the screen.

6.6 ID Setting Screen



Items	Descriptions
MCU	**"MCU" label** Displays the current device name.
+00 - +0F	**"ID Setting" text box** You can set random IDs (hexadecimal numeral). * Every device has set number of IDs.
Undo(All)	**"Undo (All)" button** Undoes the settings.
Setup	**"Setup" button** Reflects the setting content and closes the screen.
Cancel	**"Cancel" button** Ignores the setting content and closes the screen.

6.7 Protect Setting Screen



Items	Descriptions
All Block Protect(BP0/BP1)	**"All Block Protect(BP0/BP1)" label** Setting protects in order to avoid having programmed data deleted or rewritten is also available.
OK	**"OK" button** Reflects the setting content and closes the screen.
Cancel	**"Cancel" button** Ignores the setting content and closes the screen.

6.8 Program Progress Status Screen

Flashing point indicates the current status.

6.9 S550-SFW1U Product Information

S550-SFW1U product information can be accessed by following operations.

1) Connect S550-SFW1U and PC with USB.

2) Main Screen

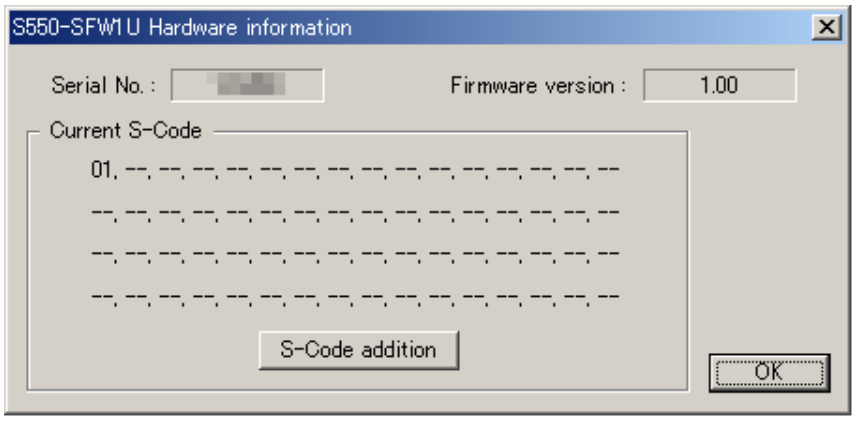
On the main screen, click the button that is circled in red (About SFW1U button) to view the "About" screen.

3) "About" Screen

* The area "Control Software Ver. X.XX" on the screen shows your control software version.

Click the button circled in red, to view the hardware information.

4) Hardware Information



* The area “Serial No.” on the screen shows the individual S550-SFW1U serial number.

* The area “Firmware Version” on the screen shows the individual S550-SFW1U firmware version.

* The number in the “Current S-Code” (“01” on the above figure) shows the S550-SFW1U “S-Code”.

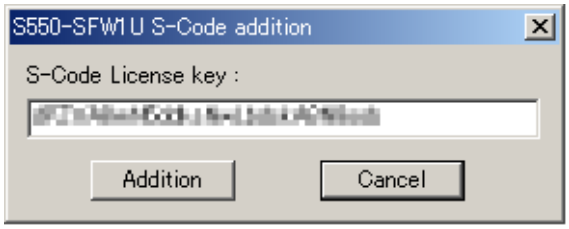
S-Codes are S550-SFW1U device corresponding codes.
Devices that do not correspond to the S-code displayed cannot be used.

For S-Code applicable devices, refer to “S550-SFW1U applicable device list”.

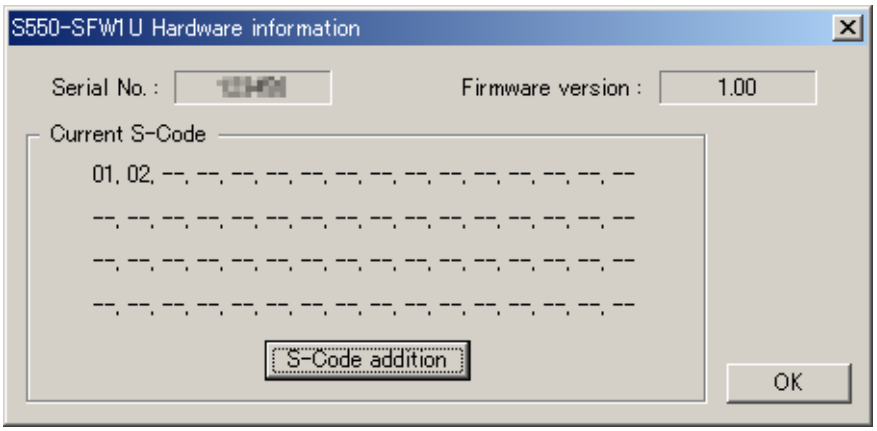
*Adding a S-Code will require purchasing a license key for an additional charge.

5) Entering your License Key

To add a S-Code, click “S-Code Addition” button on the hardware information screen.



Enter your license key and click “Addition” to add a S-Code.

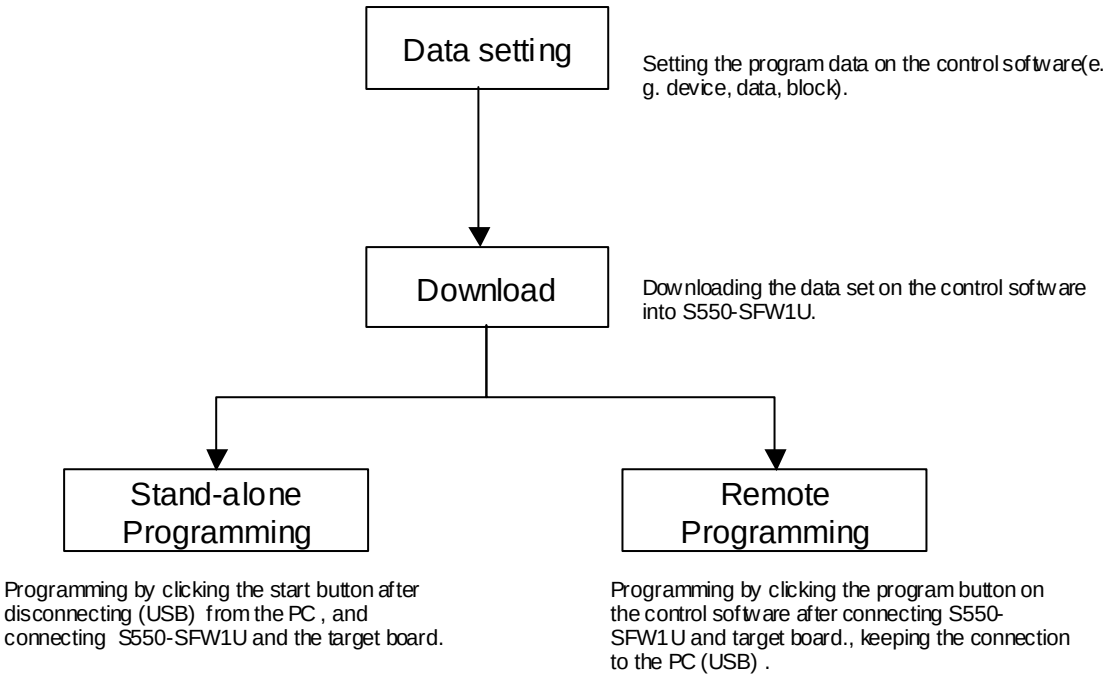


7. Programming Operations

7.1 Process Flow up to Programming

The following section describes the operations from setting the programming data on the control software to actually programming the target.
There are two ways of programming for you to choose from according to your operating environment:

- Stand-alone programming (Directly programming the target by S550-SFW1U)
- Remote programming (Programming the target from the control software via S550-SFW1U)


Data setting
Setting the program data on the control software(e. g. device, data, block).
Download
Downloading the data set on the control software into S550-SFW1U.
Stand-alone Programming
Remote Programming
Programming by clicking the start button after disconnecting (USB) from the PC , and connecting S550-SFW1U and the target board.
Programming by clicking the program button on the control software after connecting S550-SFW1U and target board., keeping the connection to the PC (USB) .

7.2 Data Settings

The following illustrates an example of the programming data setting on the control software.

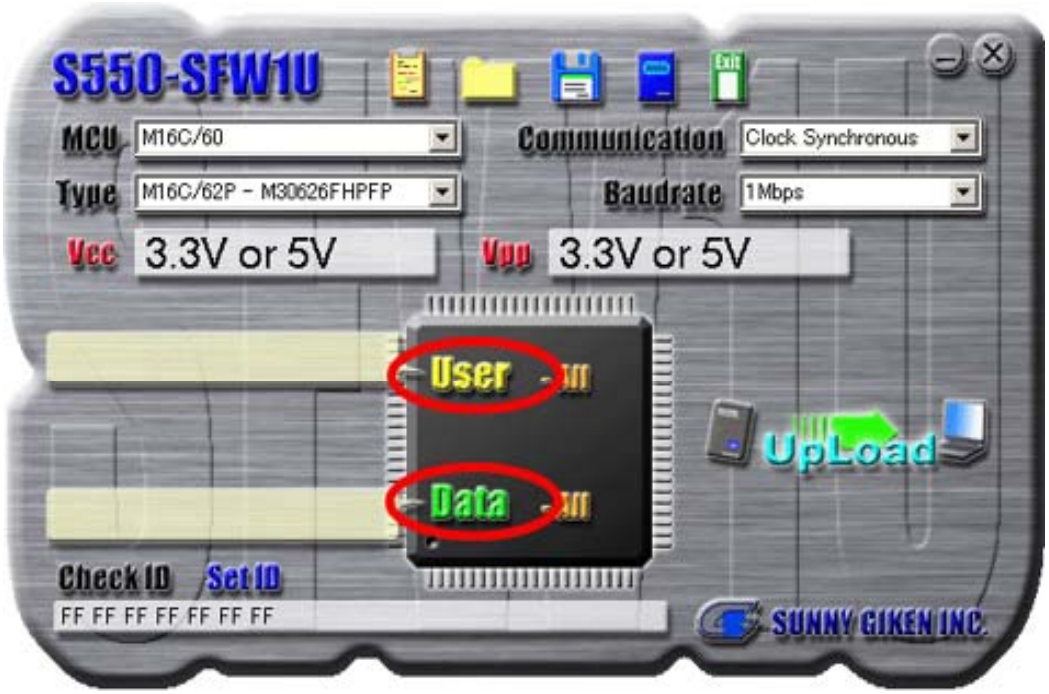
1) Starting up the control software

Start up the S550-SFW1U control software.

2) Selecting the device

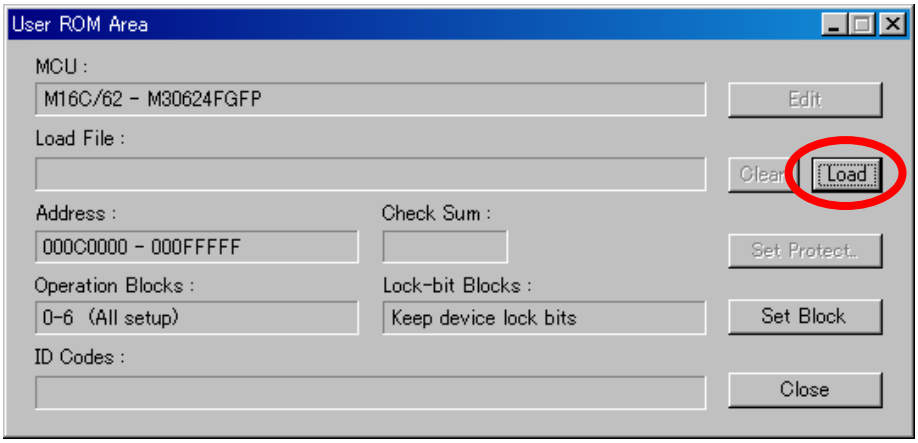
Select the target device name from the “MCU series” list box, and “MCU type” list box (circled in red).

3) Selecting Programming Data Area



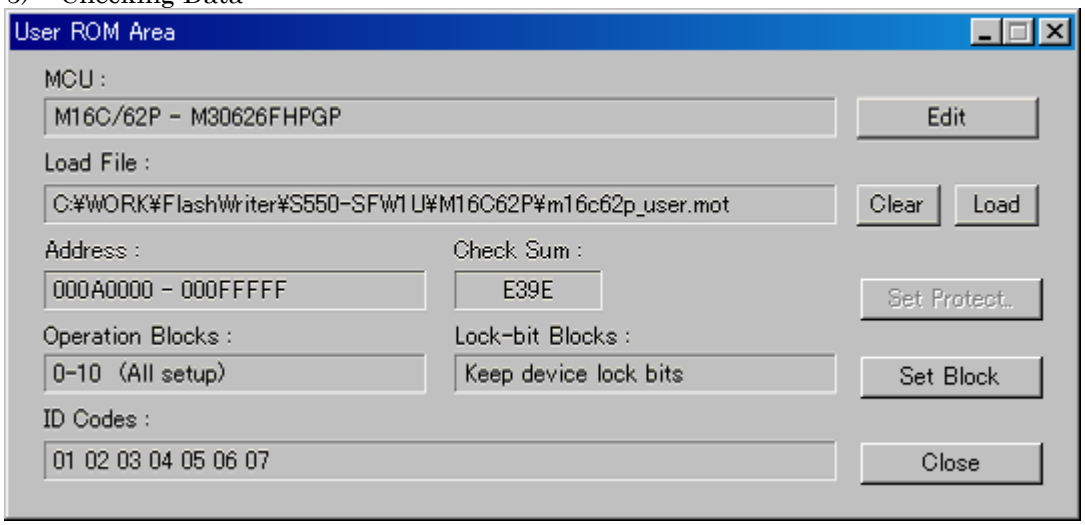
Click the "User" button ("Data" button) circled in red, to display the program data-selecting screen.

4) Program Data Selecting Screen



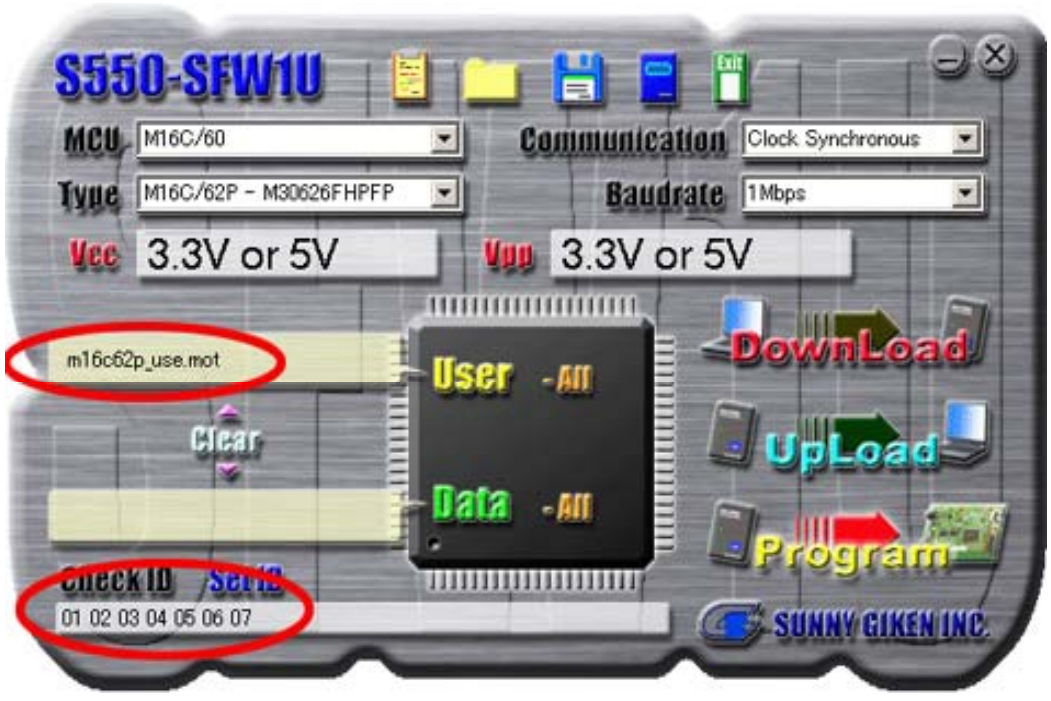
After opening the program data selecting screen, click the "Load" button circled in red to display the file-open dialog and select the program data (*.mot, *.s, *.hex).

5) Checking Data



Check the program data, and if you would like to edit the data, click the "Edit" button or "SetBlock" button.
For details of editing, please refer to the "6.5 Program Data Editing Screen" and "6.5 Block Setting Screen".
After checking, close the screen by clicking "Close".

6) Confirming the Settings



Confirm whether the proper loaded data file name, and correct ID for verification are displayed on the main screen.
In order to change settings of ID for verification, click the SetID button and edit.
For details of changing it, please refer to "6.6 ID Setting Screen".

7.3 Downloading

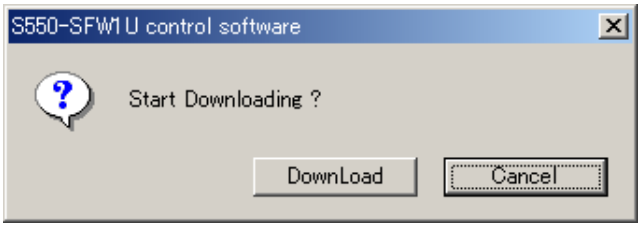
The following procedures show how to download the data set on the control software into S550-SFW1U.

1) Connect the PC and S550-SFW1U unit with a USB cable.
- For connections when downloading, refer to "4.1 Connection for Download / Upload".

2) Make sure that S550-SFW1U has started up.
- "Power" is lighted first, then "Pass", "ID Err", and "Fail" blinks once in order, and the buzzer sounds, finally when the "USB" is lighted, it has completed the start-up procedure.

* When "Pass" is lighted after the buzzer sounds, it indicates that the program data is already downloaded into S550-SFW1U.

3) Click the "Download" button.
- A dialog asking if you would like to start downloading will be displayed such as "**Start Downloading?".** If you would like to download, click "Download", and click "Cancel" to cancel the procedure.



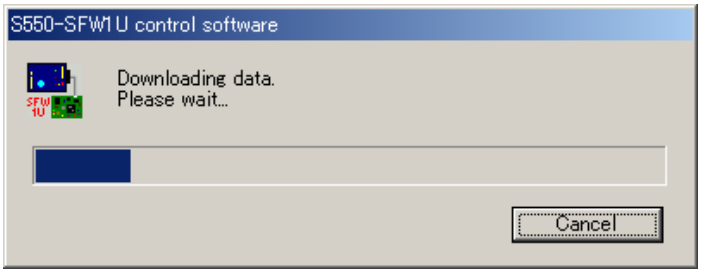
* When you try to download data with ROM code protection, a dialog such as the one shown blow will be displayed. If you would like to proceed with the download, click "OK" and "Cancel" to cancel the procedure.

S550-SFW1U control software
ROM code protection is set to the data.
Continue downloading with ROM code protection ?
OK
キャンセル

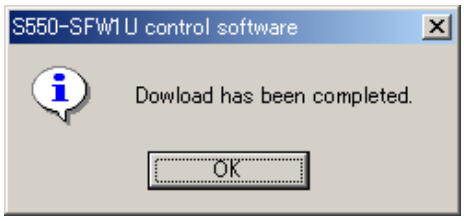
* When the data on S550-SFW1U unit and control software match, it will display "**It is not necessary to download."** and downloading will not be performed (once the control software is closed, even the matching data will be downloaded).

4) Check the progress on the progress bar

- The progress bar displays how much download has been done. If you prefer to cancel downloading, press “Cancel”.



- When the progress bar goes up to 100% and the message “**Download has been completed**” is displayed, downloading is completed.



7.4 Stand-alone Programming

1) Download the data you would like to program into S550-SFW1U.
   * For stand-alone programming, the programming data needs to be downloaded (For downloading procedures, refer to 7.3 Downloading).

2) Connect S550-SFW1U and the target board with the target connecting cable.
   - For stand-alone connections, refer to “4.2 Connection for Stand-alone Programming”.

3) Turn on the target board.

4) Make sure that S550-SFW1U has started up.
   - ”Power” is lighted first, then ”Pass”, “ID Err”, and “Fail” blinks once in order, and finally when the buzzer sounds, it has completed the start-up procedure.
   * When “Pass” is lighted after the buzzer sounds, it indicates that the program data is already downloaded into S550-SFW1U.

5) Pressing the ”Start Switch” will start the programming.

6) Performance result will be output through LEDs and buzzers/beeps.
   (Refer to “9.2 LED Status List” and “9.3 Beep Sound List”.)

7) Turn off the target board, and disconnect S550-SFW1U from the target board.

If you would like to continue programming, follow the procedures 2 through 7 again.

7.5 Remote Programming

The following procedures show how to program the program data downloaded to S550-SFW1U to the target.

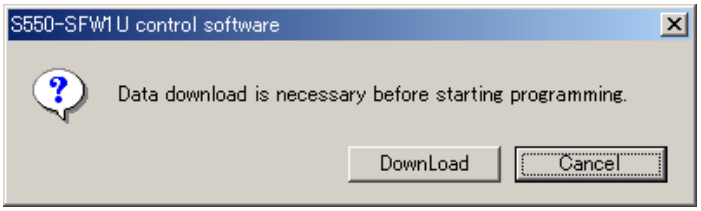
1) Connect PC and S550-SFW1U with USB, and S550-SFW1U and the target board with the target connecting cable.
(For details of connections for remote programming, refer to "4.3 Connection for Remote Programming".

2) Confirm the start-up of S550-SFW1U.
- "Power" is lighted, "Pass" first, then "ID Err", and "Fail" blinks once in order, and the buzzer sounds, finally when the "USB" is lighted, it has completed the start-up procedure.

* When "Pass" is lighted after the buzzer sounds, it indicates that the program data is already downloaded into S550-SFW1U.

3) Follow the downloading procedures 3 through 4 described in "7.3 Downloading".

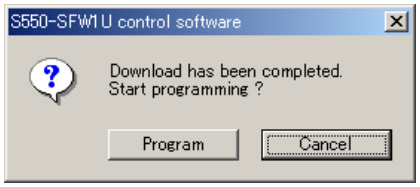
4) Press "Program" button.
- A dialog such as "**Start Downloading?"** asking if you would like to start downloading will be displayed. If you would like to download, click "Download", and click "Cancel" to cancel the procedure.



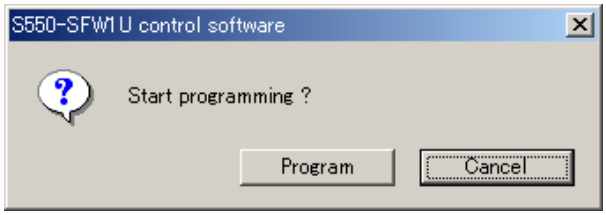
* When you try to download data with ROM code protection, a dialog such as the one below will be displayed. If you would like to proceed with the download, click "OK" and "Cancel" to cancel the procedure.

S550-SFW1U control software
ROM code protection is set to the data.
Continue downloading with ROM code protection ?
OK
キャンセル

- After completing the download, a dialog such as **"Download has been completed. Start Programming?"** asking if you would like to start programming will be displayed. Click "Program" if you would like to start programming, and "Cancel" to cancel the procedure.



* When the data on S550-SFW1U unit and control software match, downloading will not be performed, and the message **"Start Programming?"** asking if you would like to program will be displayed. Click "Program" if you would like to start programming, and "Cancel" to cancel the procedure.



5) Check the Program Progress Status Screen.

- Programming is completed when it indicates that it is completed on Program Progress Status Screen(see 6.7).

- If an error is indicated in the middle of the procedure, check the Program Progress Status Screen. The error has occurred during the procedure before the one where the arrow is blinking.

* For checking errors, this Program Progress Status Screen and LED indicator on S550-SFW1U (see "9.2 LED Status List") are the two points to be checked.

8. Other Operations

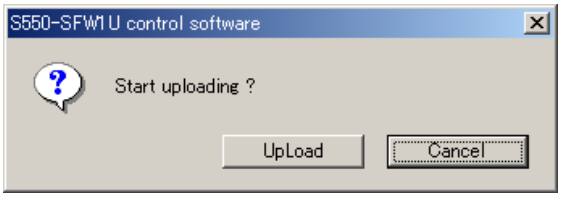
8.1 Uploading

The following procedures show how to upload the program data downloaded to S550-SFW1U onto the control software.

1) Connect PC and S550-SFW1U with USB cable.
   - For connection for uploading, refer to "4.1 Connection for Download / Upload".

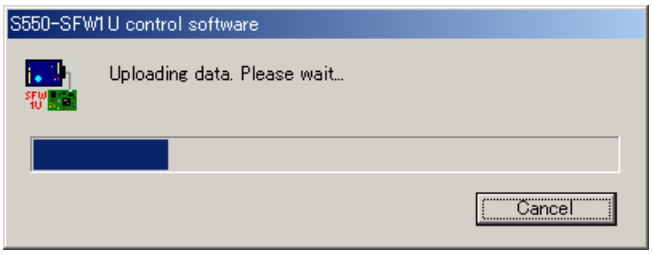
2) Confirm the start-up of S550-SFW1U.
   - "Power" is lighted first, then "Pass", "ID Err", and "Fail" blinks once in order, and the buzzer sounds, finally when the "USB" is lighted, it has completed the start-up procedure.
   * When "Pass" is lighted after the buzzer sounds, it indicates that the program data is already downloaded into S550-SFW1U.

3) Press "Upload" button.
   - A dialog message such as **"Start Uploading?"** asking if you would like to start uploading will be displayed. Click "Upload" to start uploading and "Cancel" to cancel the procedure.

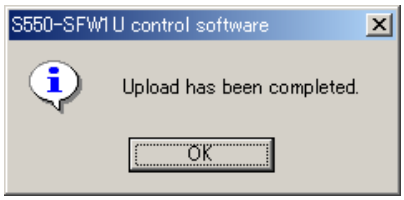


4) Check the progress on the progress bar.

   - The progress bar displays how much download has been done.
   If you prefer to cancel uploading, press "Cancel"



   - When the progress bar goes up to 100% and **"Upload has been completed**" is displayed, uploading is completed.



* When the data on S550-SFW1U unit and control software match, uploading will not be performed(once the control software is closed, even the matching data will be uploaded).

8.2 Initializing Memory

Data that is stored in the S550-SFW1U internal memory can be initialized (deleted) on unit basis for security purposes. The followings are the procedures for initializing internal memory.

1) Turn on the power of S550-SFW1U.
   - The target board does not need to be connected (it can be connected when initializing memory).

2) Press the "Start" switch and hold it for 5 seconds to start initialization.
   - A series of short beeps sounds when initialization is started and after a beep "peep" sounds, all LEDs will be turned off.

9. Error messages, Warnings, Other messages

9.1 Message Dialog

Messages	Contents
Initialize S550-SFW1U? All downloaded data will be lost.	Do you wish to clear all data in S550-SFW1U? All the downloaded data will be lost.
Initialization of SFW1U has been completed.	Data in S550-SFW1U has been cleared.
Initialize all loaded data in the ROM area on the control software?	Do you wish to initialize data loaded to ROM area (all area) on control software?
SFW1U cannot be found. Please connect SFW1U and re-perform.	S550-SFW1U is not connected to a PC. Connect them and re-start the procedure.
The data saved in SFW1U cannot be used by this version of the control software.	The current control software version is not compliant. Please upgrade the control software.
Communication error.	A communication error has occurred.
Since the data version is old, it cannot be downloaded.	S550-SFW1U firmware is not compliant with the MCU type to be downloaded.
ROM code protection is set to the data. Continue downloading with ROM code protection?	ROM code protection is set to the data. Do you wish to continue downloading data with the ROM code protection?
Start downloading?	Do you wish to start downloading?
Downloading data. Please wait...	It is downloading. Please wait.
Download has been completed.	Download has been completed.
It is not necessary to download	It is not necessary to download, as the content of the data to be downloaded match the data stored in S550-SFW1U.
Start uploading?	Do you wish to stat uploading?
Uploading data. Please wait...	It is uploading. Please wait.
MCU types do not match. Uploading is disabled.	MCU type does not match the one in S550-SFW1U. Uploading is disabled.
It is not necessary to upload.	It is not necessary to upload, as the content of the data to be uploaded match the data programmed on the control software.
Upload has been completed.	Uploading has been completed.
Data download is necessary before starting programming.	Data download is necessary before starting to program.
Start programming?	Do you wish to start programming?
Programming has been completed.	Programming has been completed.
Cannot program the target.	Programming to the target is disabled.
Failed to read a hexadecimal object file.	It has failed reading a hexadecimal object file.
The loaded file has data in areas other than editing area and a part of data will be lost. Continue reading anyway?	A part of the data will be lost as the loaded file contains data in areas other than editing area. Do you wish to continue reading anyway?
No valid data in the read file.	All data in the loaded file is not in editing area. It is an invalid file.
The selected file is not in Motorola or the Intel format.	The selected file is not in Motorola or the Intel format.
The edited data has not been saved. If not saved, all the contents of edit will be lost. Overwrite the existing file?	The content of the edit has not been saved. Do you wish to overwrite the existing file? If you do not save it, all the content of the edit will be lost.

9.2 LED Status List

Action	LED Status
Power On	After “Power” is lighted, “Pass”, “ID Err”, and “Fail” will be lighted in order, then ”Pass”, “ID Err”, and ”Fail” will go out. (If there is program data in main internal memory, “Pass” and “ID Err”will be lighted.)
Connect with PC	“USB” is lighted
Control software is accessing	“USB” flashes (single-flashes).
Initializing internal memory	“Pass” and ”Fail” flashes alternately.
Under programming	“Pass” is flashing.
Device error	“ID Err” and “Fail” is lighted.
ID error	“ID Err” is lighted.
Programming error	“Fail” is lighted.
Error (when connected with USB)	“USB” flashes (double-flashes).

9.3 Beep Sounds

Action	Beep Sounds
Power On	(After “Pass”, “ID Err”, and “Fail” flashing) “Pee”
Initializing internal memory	“Pip, Pip, Pip, Pip, …”
On completing the initialization of internal memory	“Pee”
Programming start(pressing start switch)	“Pip”
On completing programming	“Pee”
Device error	“Pipee”
ID error	“Pipee”
Other programming error	“Pipee”
When memory is broken	“Pipipee”

9.4 List of Errors during Programming

Error	Description
Mode Entry Error	Occurs when failed in mode entry before programming. **Fail** and **ID Err** LEDs on S550-SFW1U will be lighted. On control software, the message "**Mode entry error**" will be displayed, with "ID" lighted.
ID Error	Occurs when failed in checking ID. **ID Err** LED on S550-SFW1U will be lighted. On control software, the message "**ID error"** will be displayed with "ID" lighted.
Erase Error	Occurs when failed in easing. **Fail** LED on S550-SFW1U will be lighted. On control software, the message "**Erase error**" will be displayed with "Erase" lighted.
Programming Error	Occurs when failed in programming. **Fail** LED on S550-SFW1U will be lighted. On control software, the message "**Programming error**" will be displayed with "Program" lighted.
Memory Error	Occurs when the memory on S550-SFW1U is damaged. **Fail** LED on S550-SFW1U will be lighted. On control software, the message "**S550-SFW1U memory error**" will be displayed with "Program" lighted.
Verify Error	Occurs when failed in verifying. **Fail** LED on S550-SFW1U will be lighted. On control software, the message "**Verify error**" will be displayed with "Verify" lighted.

Revision History

Version	Contents for change	Revision date
	The First Edition	2003.04.18
Rev.A1	5.4 The S550-SFW1U connection circuit example for R8C/12 and R8C/13 has been added. 5.4 The S550-SFW1U connection circuit example for M16C/26, M16C/28, and M16C/29 has been changed.	2004.05.20
Rev.A2	5.4 The S550-SFW1U connection circuit example for 7542 has been changed.	2004.06.07
Rev.A3	3.6 The S550-SFW1U connection circuit example for M16C/28, and M16C/29 has been changed. 3.10 The S550-SFW1U connection circuit example for 7542 has been changed.	2005.06.01
Rev.A4	2.1 The operating voltage has been changed. 3.8 The S550-SFW1U connection circuit example for R8C/10, R8C/11, R8C/12 and R8C/13 has been changed.	2005.07.27
Rev.B	3.9 The S550-SFW1U connection circuit example for R8C/Tiny series other than R8C/10, R8C/11, R8C/12, and R8C/13 groups has been changed.	2006.04.07
Rev.C	3.2 The S550-SFW1U connection circuit example for R32C/100 has been added. 6.7 The protect setting screen was added.	2006.11.14
Rev.D	3.8 The S550-SFW1U connection circuit example for R8C/10, R8C/11, R8C/12 and R8C/13 has been changed. 6.1 Main Screen/Communication type "Clock Synchronous is ~" -> "*R8C/Tiny: Single-wire is ~" revised.	2007.01.26
Rev.E	2.2 The explanation of "Non-response to clock asynchronous serial I/O" has been added to "Operation Mode".	2007.07.23
Rev.F	6.1 Main Screen/ Data ROM area program file Explanation of program ROM2 Area was added.	2008.08.25
Rev.G	3.1 The S550-SFW1U connection circuit example for R32C100 series (excluding R32C/112) has been changed. 3.2 The S550-SFW1U connection circuit example for R32C/112 groups has been changed.	2008.12.19
Rev.H	6.5 Block Setting Screen/ Operation Block Explanation of Only the device of R8C/3X,R8C/LX is different from a real block number	2009.01.26
Rev.I	3.3 The S550-SFW1U connection circuit example for M16C/50 has been added. 3.10 The S550-SFW1U connection circuit example for R8C family other than R8C/10, R8C/11, R8C/12, and R8C/13 groups has been changed.	2009.04.27
Rev.J	3.10 The S550-SFW1U connection circuit example for R8C/LX has been added.	2009.07.27
Rev.K	2.4 A homepage address has changed.	2009.10.16
Rev.L	2.2 The action mode has been added.	2009.12.28

Overseas Standards

・CE Mark Obtained（EMI:EN55011 Group1 ClassA ,EMS:EN610000-6-2）

・FCC Compliance:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions; (1)This device may not cause harmful interference, and (2)this device must accept any interference received, including interference that may cause undesired operation.

Serial Flash Programmer S550-SFW1U　Operation Manual

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Editor	:	Sunny Giken Inc.
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E-mail	:	info@sunnygiken.co.jp